

IFSA Souvenir 2026

*Perspectives, experiences and stories
from India's Forest Officers*



Released on the occasion of Eco Warrior Awards 2026



WHY FORESTS MATTER



A Healthier Planet.
A Brighter Tomorrow



BIODIVERSITY



CLIMATE



WATER



LIVELIHOODS



FUTURE

*When forests thrive,
life thrives.*



Kabini, Karnataka

(Picture credits: Varun Aditya)

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IFSA SOUVENIR 2026

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Twelve Voices: Senior forest leaders share insights on conservation, climate and communities



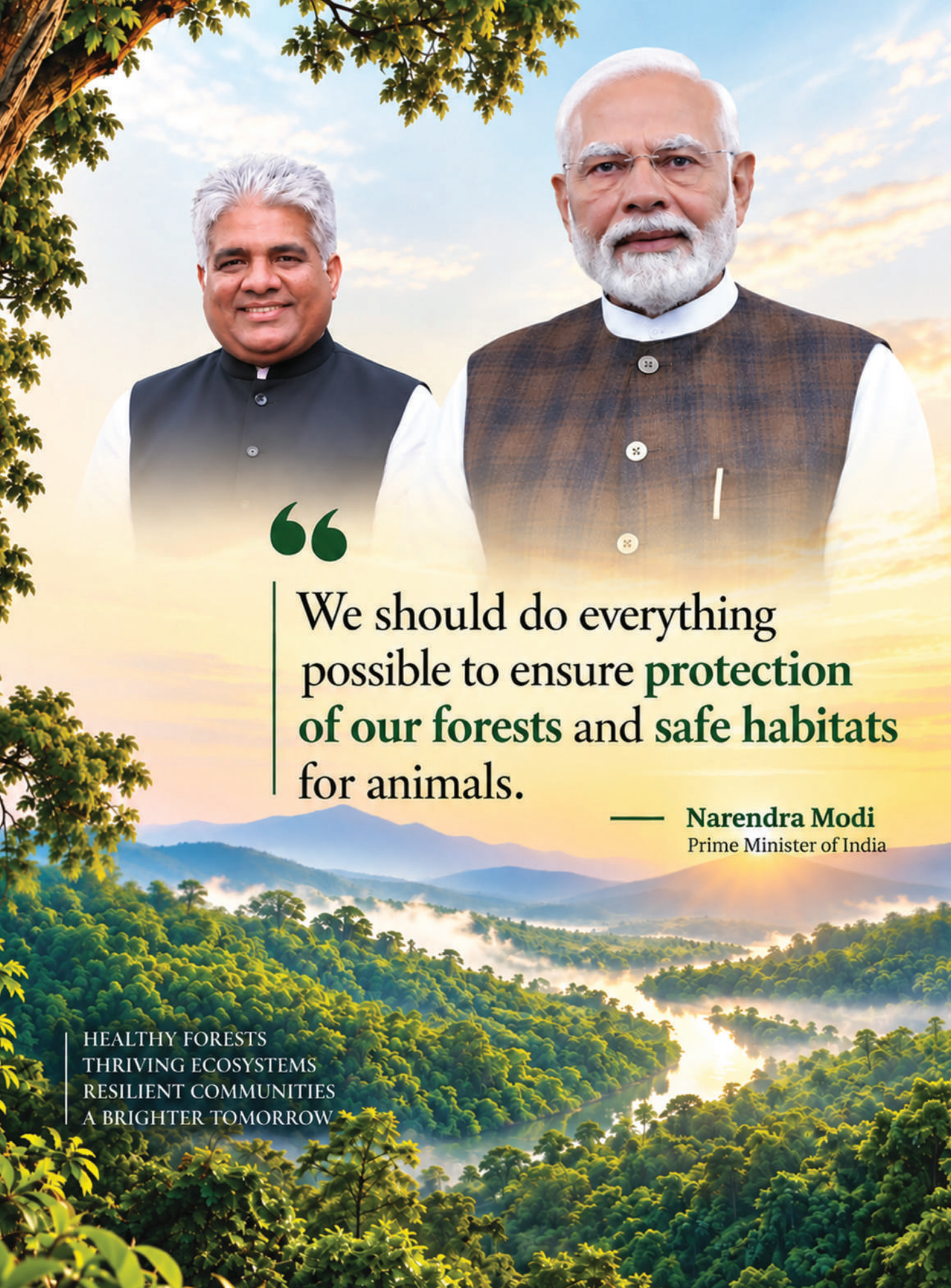
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We should do everything possible to ensure **protection of our forests and safe habitats** for animals.

— **Narendra Modi**
Prime Minister of India

HEALTHY FORESTS
THRIVING ECOSYSTEMS
RESILIENT COMMUNITIES
A BRIGHTER TOMORROW



मंत्री
पर्यावरण, वन एवं जलवायु परिवर्तन
भारत सरकार



MINISTER
ENVIRONMENT, FOREST AND CLIMATE CHANGE
GOVERNMENT OF INDIA

भूपेन्द्र यादव
BHUPENDER YADAV



MESSAGE

It gives me immense pleasure to extend my greetings on the occasion of the Fourth Edition of the Eco Warrior Awards, instituted to recognise and celebrate outstanding contributions to the conservation of our forests, wildlife and environment.

India's forests and natural ecosystems are invaluable national assets, vital for ecological security, climate resilience and the well-being of our people. Forest officers and frontline conservationists play a crucial role in protecting this precious heritage through dedication, innovation and commitment.

Eco Warrior Awards instituted by Central Unit of IFS Association and Indian Masterminds, provides a much needed appreciation to the selfless services of Forest officers.

I congratulate all the award winners and commend their exemplary service. May their achievements inspire many more to join the nation's collective endeavour towards a greener and sustainable future.

(Bhupender Yadav)



MESSAGE

It gives me immense pleasure to extend my warm greetings on the occasion of the Fourth Edition of the Eco Warrior Awards organised jointly by IFS Association and Indian Masterminds. These awards represent a meaningful initiative to recognise and celebrate individuals and institutions whose exceptional work is contributing to the protection of India's forests, wildlife and natural heritage.

India's forests are fundamental to our ecological security, climate resilience and the well-being of millions of people. Protecting this invaluable natural wealth requires commitment, courage, innovation and sustained efforts, particularly from those working on the ground in challenging circumstances.

The Eco Warrior Awards provide an important platform to bring such inspiring stories into the public domain, acknowledge exemplary service and encourage greater participation in conservation.

I congratulate all the award winners and nominees for their valuable contributions and wish the Eco Warrior Awards every success. May this initiative continue to inspire a stronger and more inclusive movement for nature conservation.

(Sushil Kumar Awasthi)

IFS, Uttar Pradesh (1991 Batch)
Director General Forests & Special Secretary, MoEF&CC



Foreword

I am pleased to present the Fourth Edition of the Eco Warrior Awards. Over the years, this Award has provided a meaningful platform to recognize individuals whose dedication and commitment have helped protect India's natural environment.

I express my sincere appreciation to all the nominees, awardees, members of the jury, partners, and everyone who has contributed to bringing this edition together.

This edition honours fifteen individuals whose work reflects perseverance, responsibility, and a deep commitment to conservation. Their contributions, often undertaken with great personal commitment and in challenging circumstances, deserve our appreciation and recognition.

My heartfelt congratulations to all fifteen awardees. I hope their stories encourage greater awareness and inspire continued action to safeguard our natural heritage.

I wish the Eco Warrior Awards continued success in the years ahead.

Anita Karn

IFS, Gujarat (1997 Batch)

President, Indian Forest Service Association &
Additional Secretary, Dept of Food and Public Distribution
Govt of India



BY MONALISA
DASH
Secretary General
of IFSA

From an Idea to a National Movement

The Journey of Eco Warrior Awards from an seed to a fully grown tree has been a smooth one

Courtesy – Gobind Sagar Bhardwaj (Director, WII)

In India's forests, wetlands, grasslands and protected areas, thousands of battles are fought every day—against poaching, illegal logging, habitat destruction, human-wildlife conflict and the growing pressures of climate change. Many of the people fighting these battles rarely make the headlines.

It was to bring these unsung environmental warriors into the national spotlight that **Indian Masterminds**, in collaboration with the **Indian Forest Service Association**, instituted the Eco Warrior Awards in 2023. Conceived as India's first dedicated awards platform for Indian Forest Service officers, the initiative sought to recognise not just achievement, but courage, innovation, commitment and the ability to make conservation work on the ground.

The inaugural Eco Warrior Awards were held on November 3, 2023, at the All India Radio Auditorium in New Delhi. The first edition established the basic philosophy of the awards: celebrate the people who protect forests and wildlife, showcase their stories and create a larger national conversation.

Five officers were honoured in the inaugural edition. The categories covered Forest Protection, Wildlife Conservation, Wildlife Protection, Best Use of Technology for Conservation and Community Connect. The awards were presented by Hon'ble Union Minister for Environment, Forest and Climate Change Shri Bhupender Yadav who described wildlife conservation as not merely a service but a mission.

THE 2023 WINNER

Forest Conservation



BASU KANNOGIA
Madhya Pradesh, 2010

Wildlife Conservation



DR MOHAN RAM
Gujarat, 2012

Wildlife Protection



RITESH SAROTHIYA
Madhya Pradesh, 2017

Community Connect



MILLO TASSER
(AGMUT) Arunachal Pradesh, 2009

Best Use of Technology



BISWAJIT MISHRA
Karnataka, 1998

THE 2024 WINNER

Forest Conservation



ANUPAM SHARMA

Madhya Pradesh, 2018

Wildlife Conservation



DR. P RAMESH KUMAR

Karnataka, 2008

Wildlife Protection



PRATIBHA AHIRWAR

Madhya Pradesh, 2017

Community Connect



S. JUSTIN JONES

West Bengal, 2018

Best Use of Technology



VARUN JAIN

Chhattisgarh, 2017

Lifetime Achievement



DIPAK SARMAH

Karnataka, 1977

But the initiative was conceived as more than an awards night. The first edition was accompanied by a National Conclave on Forest and Wildlife Conservation, bringing IFS officers and conservation practitioners together to discuss the challenges confronting India's natural heritage. Thus began a format that would become an important part of the Eco Warrior identity—recognition combined with knowledge exchange and public discourse.

The second edition in 2024 took the initiative a step further. Held on September 11, the event expanded the conversation around conservation to include responsible and eco-friendly tourism, sustainable development and the role of public figures in creating environmental awareness. A national conclave, expert discussions and a wildlife photography exhibition added new dimensions to the programme.

The awards themselves also evolved. Alongside recognition for forest and wildlife protection, the 2024 edition introduced a **Lifetime Achievement Award**, acknowledging that conservation is not only about individual projects or spectacular interventions but also about decades of dedicated service. Retired IFS officer Deepak Sarmah became the recipient of this special honour.

By its third edition in 2025, the Eco Warrior Awards had begun to acquire an identity of its own. The event broadened its recognition to include **Innovative Initiatives**, while continuing to honour excellence in forest conservation, wildlife conservation, wildlife protection, community engagement, technology and lifetime achievement. Projects such as Project Cheetah and *Ek Ped Maa Ke Naam* were also recognised, demonstrating that the platform had expanded beyond individual officers to initiatives with wider conservation significance.

The 2025 edition also saw the launch of a special e-book and AV chronicling the journey of the awards from 2023 to 2025—a fitting marker of how rapidly the initiative itself had grown.

This year, in view of overwhelming nominations exhibiting outstanding work, it was decided to have **two awards in each categories**. The jury also decided to have **Jury's Special Awards** along with the Innovative Initiatives rechristened as Awards to **Special Projects**.

Past three editions have therefore transformed an idea into an institution. The Eco Warrior Awards have created a space where the forest officer working in a remote landscape, the conservation innovator using technology, the community leader protecting biodiversity and the veteran who spent a lifetime in the service of nature can share the same national stage.

The Eco Warrior Awards is fortunate to have been blessed by Honourable Union Minister for Environment, Forest and Climate Change (MoEF&CC) Shri Bhupender Yadav ji. While he personally distributed the awards in 2023 in two following editions, he addressed the awards function through a Video link.

THE 2025 WINNER

Forest Conservation



IRFAN RASOOL WANI

(AGMUT) Kashmir, 2006

Wildlife Conservation



DR SONALI GHOSH

Assam- Meghalaya, 2000

Wildlife Protection



PARVEEN KASWAN

West Bengal, 2016

Community Connect



K M ABHARNA

Maharashtra, 2013

Best Use of Technology



DR S K SRIVASTAVA

Gujarat, 1996

Lifetime Achievement



DR H S SINGH

Gujarat, 1980

Innovative Initiative



PROJECT CHEETAH

Kuno National Park
Madhya Pradesh

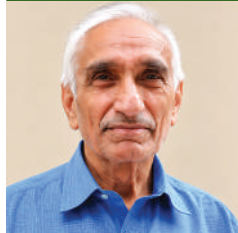
Innovative Initiative



**EK PED
MAA KE NAAM**

Uttar Pradesh

THE 2026 WINNER

Protected Area Management  DR. PRAKASH CHAND GOGINENI Odisha, 2009	Protected Area Management  MANISH SINGH Uttar Pradesh, 2013	Wildlife Protection & Conservation  DR. SANJEEV SHARMA Himachal Pradesh, 2013	Wildlife Protection & Conservation  S. SENBAGAPRIYA Tamil Nadu, 2013	Environment Conservation  SUMAN SHIVASHANKAR SIVACHAR W M Nagaland, 2013
Environment Conservation  DHARM SINGH MEENA Uttarakhand, 2009	Community Connects  GURHARSH SINGH Himachal Pradesh, 2021	Community Connects  DHAWAN KUMAR RAWAT Arunachal Pradesh, 2017	Best Use of Technology  RAMSUNDAR M Bihar, 2019	Best Use of Technology  N. JAYARAJ Tamil Nadu, 2013
Special Jury Award  SAVITA DAHIYA Rajasthan, 2013	Special Jury Award  K. KARTHIKEYANI Tamil Nadu, 2018	Special Project  PROJECT GIB Rajasthan	Special Project  PROJECT ELEPHANT Wildlife Department	Lifetime Achievement  BRAJ KISHORE SINGH Karnataka, 1976

At its heart, the initiative celebrates a simple truth: India's natural heritage survives not only because of laws and policies, but because there are people willing to stand between nature and its many threats. The Eco Warrior Awards are an attempt to ensure that their stories are seen, heard and remembered. •

Twelve Voices

Senior forest leaders share insights on conservation, climate and communities



India's forests are far more than stretches of green on a map. They are watersheds, wildlife habitats, climate buffers and the lifeline of millions of people. Protecting this extraordinary natural heritage calls for knowledge, courage and a deep understanding of the delicate relationship between nature and human development.

The Indian Forest Service has been at the forefront of this endeavour for decades. Its officers have worked across some of the country's most challenging landscapes, confronting threats to forests and wildlife while constantly seeking new ways to reconcile conservation with the aspirations of a changing India.

Through 12 insightful articles by senior IFS officers, this compendium explores the pressing issues, emerging challenges and possible solutions shaping India's environmental future—from forests and wildlife to climate change and conservation.

Together, these voices offer a fascinating insider's view of India's green frontier—and the people striving to protect it. Hope it provides an engrossing reading...



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India's Forests from Colonial Legacy to Climate Action

India's forests, draped across over one-fifth of its landmass, are not just green patches on the map—they are the nation's lungs, water towers, seed banks, and cultural soul. Yet, the policies meant to steward them have often resembled a cart without a horse, or worse, a compass without a destination. Since Independence in 1947, India's journey from sustained yield forestry to Sustainable Forest Management (SFM) has been long, winding, and uneven, occasionally inspired but frequently stuck in the undergrowth of bureaucratic inertia and legal ambiguity.



BY DR. PADAM
PARKASH BHOJVAID

Timber Mines to Ecological Sentinels

At the dawn of independence, India inherited a forest regime shaped by colonial needs. The Indian Forest Act of 1927, still largely intact today, was a tool of control—crafted to extract timber and subdue communities. Forests were viewed less as ecosystems and more as standing inventories of wood, waiting to be felled with mathematical precision under the doctrine of “sustained yield.” This was forestry as accounting: how much wood could be removed without reducing the stock?

The 1952 Forest Policy, India's first as a sovereign nation, made some nods to the protective role of forests, but the underlying ethos remained industrial. It advised maintaining one-third of the country's land under forest, but continued to privilege commercial plantations and wood-based industries. Forest-dependent communities were seen as threats rather than stakeholders.

The Policy That Turned the Leaf

It took another 36 years before India began to see its forests through a different lens. The National Forest Policy of 1988 marked a watershed moment. For the first time, ecological security, biodiversity conservation, and the needs of forest-dwelling communities were placed at the centre of forest governance. The policy acknowledged that forests are not merely a source of wood but a mosaic of life, deeply intertwined with livelihoods, climate, and culture.

It was also the policy that birthed a buzzword that dominated the 1990s: Joint Forest Management (JFM). It introduced a participatory model where

local communities were to be partners in protection and restoration efforts. In states like West Bengal, Andhra Pradesh, and Madhya Pradesh, the model initially flourished. Forests regenerated, and village protection committees became symbols of grassroots environmentalism.

But like a vine left unsupported, JFM too began to wither. The forest department, steeped in a command-and-control culture, remained the primary custodian. Communities were rarely treated as equals; benefit-sharing was often ill-defined; and institutional support for JFM groups was thin. It was participation on paper, not empowerment on the ground.

A Policy in Limbo, a Law in Chains

Even as the ecological imagination expanded, the legal framework remained fossilised. The 1927 Forest Act, designed for empire, still set the boundaries of action. In India, forest policy has always run ahead of the law, a legacy of colonial governance where edicts preceded legislation. As a result, every new policy has found itself straining against an outdated legal skin.

Efforts to draft a new forest policy after 1988 have failed to bear fruit. A draft circulated in 2018—heavy on private sector participation, light on community rights—met with strong resistance and was shelved. For over three decades, India has been navigating the future of its forests with a rear-view mirror.

Meanwhile, the Forest Rights Act of 2006 attempted to correct historic injustices by granting land and usage rights to tribal and forest-dependent communities. Though transformative in design, its implementation has been uneven and, in some states, fiercely resisted.



From Yield to Management

Globally, forestry was undergoing a paradigm shift. The 1990s and 2000s saw the rise of Sustainable Forest Management (SFM)—a concept that expanded forestry beyond timber, to include soil conservation, biodiversity, carbon storage, water regulation, and livelihoods. In theory, SFM seeks to manage forests as dynamic ecosystems that provide a wide range of goods and services in perpetuity.

India endorsed this shift in its policy discourse. Terms like “ecosystem services,” “carbon sinks,” and “landscape-level planning” entered forest department documents. Yet, the translation of these ideas into everyday practice remained hazy. Most forest working plans—still the blueprint for local management—continue to focus on timber-centric operations. The tools and metrics for valuing and managing ecosystem services remain underdeveloped. Institutional capacity is stretched, and coordination between forestry, water, agriculture, and climate agencies is minimal.

Forests as Carbon Currency

As climate change emerged as the defining challenge of the 21st century, forests were recast once again—this time as frontline actors in mitigation. India, under its Nationally Determined Contributions (NDCs) to the Paris Agreement, pledged to create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through forests and tree cover by 2030. Programs like the Green India Mission were launched to operationalise this ambition.

Forestry was also included as a Clean Development Mechanism (CDM) activity, allowing forest projects to earn carbon credits. But participation has been dismal. Procedural complexities, lack of institutional support, and skepticism about benefit-sharing have kept communities and state agencies away.

Internationally, India signed on to REDD+ (Reducing Emissions from Deforestation and Forest Degradation), but its implementation has not gone beyond pilot projects. The potential for forests to contribute meaningfully to India’s climate strategy remains high but untapped.

The Way Forward

India’s forests today stand at a critical juncture. They are expected to deliver on multiple fronts: biodiversity protection, climate regulation, water security, and rural livelihoods. Yet, the tools to manage them remain outdated, fragmented, and underpowered.

Finally, communities must be seen not as passive beneficiaries but as equal co-managers. The success of India’s forest future will hinge on the depth of its democracy in the forest heartland



The way forward must begin with a new National Forest Policy, not as a document of aspiration but as a blueprint of action, backed by legal reform. The Indian Forest Act must be rewritten to reflect contemporary ecological realities and democratic values.

Second, SFM must be made operational, not merely rhetorical. This means training forest personnel in ecological science and participatory governance, equipping local communities with tools for monitoring and management, and establishing robust systems to measure ecosystem services.

Third, the focus must shift from plantation targets to landscape resilience—ensuring ecological connectivity, adaptive management in the face of climate variability, and integration across sectors.

Finally, communities must be seen not as passive beneficiaries but as equal co-managers. The success of India’s forest future will hinge on the depth of its democracy in the forest heartland.

A nation that hopes to lead the world on climate action cannot afford to mismanage its own green heritage. Forests are not just resources to be governed; they are living systems to be honoured, understood, and protected. The path ahead requires not just policy tweaks but a philosophical reimagining—a shift from managing forests as commodities to embracing them as commonwealth. ●

ABOUT THE AUTHOR

Author is Retired IFS (1983) from Haryana Cadre

The Future of India's Participatory Forestry



BY H. S. GUPTA

For more than three decades, India's participatory forestry has been shaped by two influential policy paradigms. Joint Forest Management (JFM) sought to restore degraded forests by encouraging community participation in protection and regeneration, while the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA) aimed to correct historical injustice through the legal recognition of forest rights. Although these reforms emerged from distinct historical contexts and pursued different objectives, contemporary debates increasingly portray them as competing models of community forestry.

The Missing Question

India has conducted one of the largest and most ambitious experiments in participatory forestry anywhere in the world. Over the past three decades, millions of hectares of forests have been brought under community-based institutional arrangements, thousands of village-level organisations have been created, and millions of forest-dependent people have been drawn into the formal architecture of forest governance.

The question is what institutional conditions enable communities to govern forests effectively over the long term. Much of the existing literature evaluates participatory forestry through indicators such as committees constituted, claims recognised, titles distributed or forest areas brought under particular programmes.

Two Institutional Journeys

India's contemporary participatory forestry is principally shaped by JFM and the FRA. Although frequently portrayed as competing approaches to community forestry, they emerged from fundamentally different policy concerns and redistributed different components of forest governance.

JFM arose during a period when widespread forest degradation had become an increasingly visible ecological and administrative concern. By the late 1970s and 1980s, policing forests through state agencies alone was proving both economically expensive and institutionally inadequate. Its central innovation was institutional participation. Communities were invited to share responsibility for protecting and regenerating forests through village-level committees, while the State



Image Credit- Principal Chief Conservator of Forest and head of the forest force, Govt of Gujarat

largely retained legal ownership, strategic decision-making authority and regulatory control. Benefit-sharing arrangements sought to align local incentives with conservation objectives.

The FRA emerged from a very different historical context. Its primary objective was the correction of historical injustice arising from the non-recognition of customary rights of Scheduled Tribes and other traditional forest dwellers. Individual Forest Rights, Community Rights and Community Forest Resource (CFR) rights expanded the legal space available to communities, recognising them not merely as participants in state-led management but as rights-holders with statutory protection.

Each framework was designed principally to address a different problem: JFM forest regeneration through participation, and the FRA social justice through recognition of historically denied rights. Neither reform comprehensively specified the institutional conditions under which communities could govern forests as complex common-pool ecological systems over the long term.

Community Governance Space

Community Governance Space refers to the effective institutional domain within which communities are able to exercise legitimate rights, discharge stewardship responsibilities, make collective decisions, enforce locally accepted rules, resolve conflicts, adapt to ecological change and remain accountable for sustaining common forest resources over time.

The emphasis is on effective rather than merely formal governance. Institutions may allocate legal rights without creating corresponding capacities for collective action. Conversely, communities may possess strong traditions of stewardship while lacking secure legal authority to sustain them. CGS therefore represents the institutional intersection where legal legitimacy, social organisation and ecological stewardship reinforce one another.

Five Dimensions of Community Governance Space

Rights: Communities require secure and legitimate rights over forest resources. These provide legal certainty and establish the legitimacy necessary for long-term stewardship. Rights, however, represent only the starting point of governance.

Responsibilities: Governance requires clearly understood responsibilities for protection, regeneration, sustainable harvesting and ecological maintenance. Responsibilities link rights with stewardship obligations.

Authority: Communities must possess meaningful authority to formulate local rules, regulate resource use, adapt management practices and respond to changing ecological conditions.

Accountability: Authority requires mechanisms through which decisions remain transparent, collectively accepted and socially accountable, both internally through village institutions and externally through constitutional, legal and ecological obligations.

Adaptive Capacity: Forests are dynamic ecological systems. Fire, invasive species, climate variability, wildlife movement and changing livelihood pressures continually reshape management challenges. Effective institutions must therefore be capable of learning, adapting and revising local rules without undermining legitimacy.

Ecological Governance

Perhaps the most distinctive contribution of Community Governance Space lies in its recognition that forests are

ecological commons rather than merely administrative units. Administrative boundaries are typically fixed. Ecological processes are not. Water flows across village boundaries, wildlife disperses across landscapes, forest fires ignore cadastral maps, and carbon storage depends upon cumulative vegetation dynamics. Institutions designed solely around administrative jurisdictions may therefore fail to govern ecological interdependence effectively.

Community Governance Space incorporates this ecological dimension by recognising that governance must ultimately be evaluated according to its capacity to sustain ecological processes rather than simply administer legally recognised territories.

This also has implications for scale. Village institutions remain indispensable, but ecological systems frequently operate across multiple jurisdictions. Future arrangements may therefore need stronger mechanisms for coordination across communities while preserving local legitimacy and participation.

Where Do We Go From Here?

The next stage of inquiry should move beyond evaluating institutional arrangements solely in terms of participation or rights. Both are indispensable components of democratic governance, but neither automatically generates the collective institutions required to manage forests as long-lived ecological commons.

Future scholarship should devote greater attention to institutional capability rather than institutional form, examining the quality of local governance, collective decision-making and the relationship between community institutions and ecological outcomes.

Research should also strengthen the integration of ecological evidence with institutional analysis. Evaluations should examine whether different governance arrangements produce measurable improvements in biodiversity, forest regeneration, habitat connectivity, watershed integrity or climate resilience over extended periods.

Finally, participatory forestry must increasingly be viewed through a landscape perspective. Village institutions remain indispensable, but ecological processes operate across scales that extend beyond individual settlements.

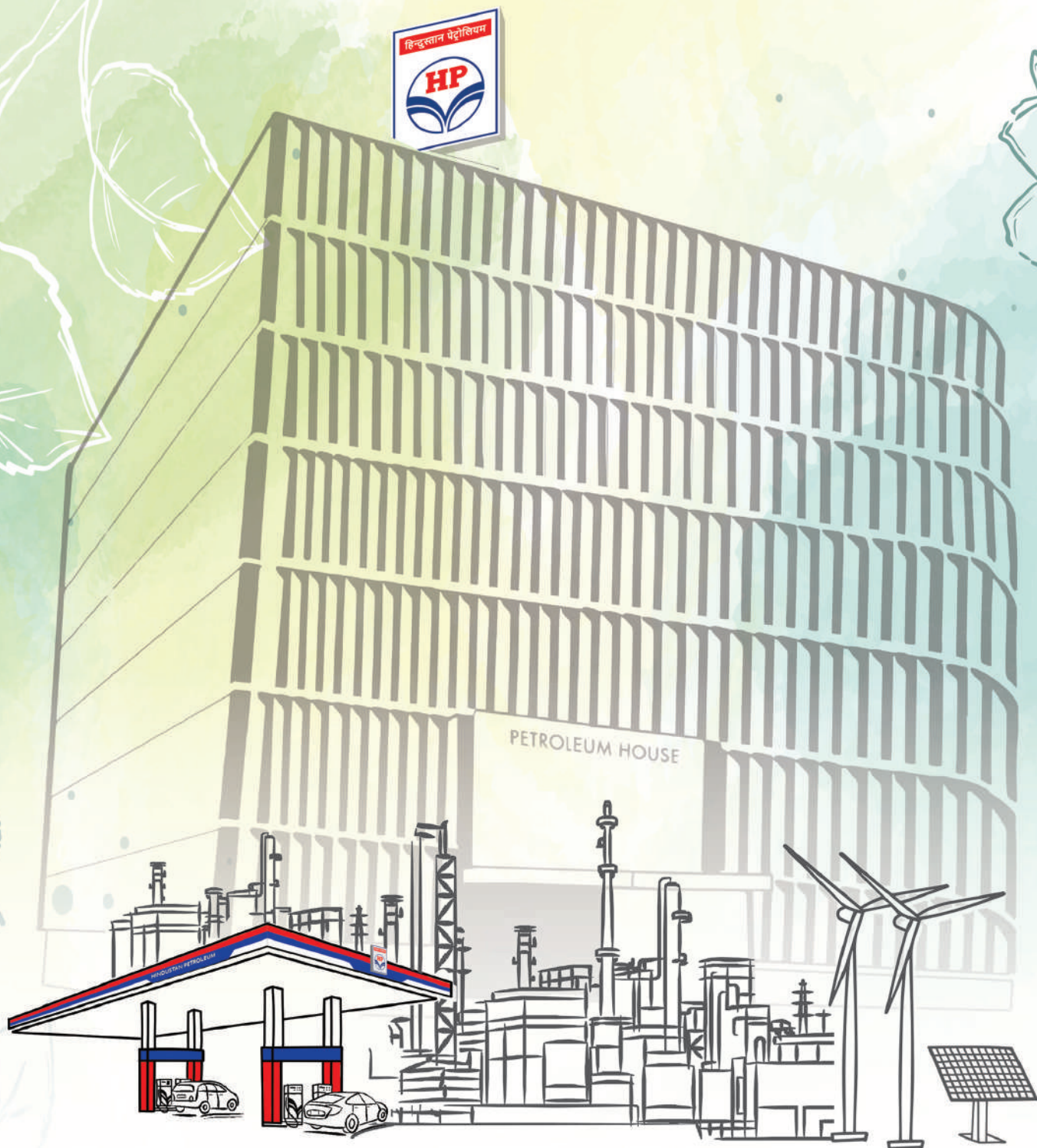
This highlights the need for institutional arrangements capable of coordinating stewardship across interconnected ecological landscapes while retaining local legitimacy and accountability. ●

ABOUT THE AUTHOR

Author is IFS (1988-Batch), Former PCCF, Jharkhand



Image Credit- Wikimedia Commons



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Hindustan Petroleum Corporation Limited

Protecting the Himalayas from Waste Management Crisis



BY IRFAN
RASOOL WANI

Kashmir's breathtaking landscapes, snow-clad mountains, alpine meadows and pristine forests have long attracted travellers from across the world. Tourist destinations such as Gulmarg, Tangmarg, Gurez, Doodhpathri, Pahalgam, Sonamarg, Bangus Valley and Yousmarg witness

an unprecedented influx of visitors. While tourism has emerged as a major driver of economic growth and livelihood generation, it has also given rise to an equally pressing environmental challenge—the mounting crisis of solid waste management in the fragile Himalayan ecosystem.

A significant proportion of Kashmir's tourist destinations are located within or adjacent to forest areas. Every year, hundreds of thousands of tourists generate enormous quantities of plastic bottles, food packaging, disposable cutlery and other non-biodegradable waste. In the absence of adequate collection and disposal mechanisms, much of this waste eventually finds its way into forests, streams and wetlands, contaminating soil and water resources and threatening wildlife habitats.

The Himalayan ecosystem is particularly vulnerable to environmental degradation owing to its steep terrain, rich biodiversity and limited regenerative capacity. Improper disposal of waste not only mars the scenic beauty of these destinations but also affects wildlife through ingestion of plastics and contamination of natural water sources. Open dumping attracts bears and other wild animals towards human habitations, increasing the risk of human-wildlife conflict.

The Government has strengthened the regulatory framework through the notification of Solid Waste Management Rules 2026, placing greater responsibility on local bodies and stakeholders for sustainable waste management.

Addressing this challenge requires a comprehensive and coordinated strategy involving government agencies, local communities, tourism stakeholders and visitors. Recognising the urgency of the situation, the Jammu & Kashmir Forest Department has risen to the occasion and initiated a series of measures to ensure effective implementation of the Solid Waste Management Rules, 2026. The major initiatives undertaken are outlined below.

Preparation of Master Plans

The first step has been the preparation of comprehensive master plans for all major tourist destinations, integrating tourism development with ecological conservation. These plans incorporate scientific assessments of carrying capacity to ensure that tourist inflows remain within the ecological limits of each destination. To this end, the Department has decided to engage premier institutions such as the Indian Institute of Forest Management (IIFM) and various Indian Institutes of Management (IIM) to undertake carrying-capacity studies and develop destination-specific management frameworks.

Destination-Specific Frameworks

A detailed solid waste management framework is being prepared for every tourist destination, and in many locations such frameworks have already been developed and brought under implementation. These waste management plans now constitute an integral component of tourism master plans.

Ban on Single-Use Plastics

As part of the waste management framework, the Department requested Deputy Commissioners to issue prohibitory orders banning the use and sale of single-use plastics in ecologically sensitive tourist destinations. The Deputy Commissioners have issued the necessary orders, thereby providing the



Bear-proof dustbins installed in tourist places



Cleanliness drive in Pirpanjal Forest Division

legal backing required by field staff for effective implementation of the solid waste management plan.

Anti-Polythene Check-Posts

Anti-polythene check-posts have been established at the entry points of major tourist destinations to prevent the inflow of plastic and polythene products into forest areas. Vehicles entering these destinations are thoroughly checked, and prohibited plastic items are removed before entry. Visitors are encouraged to use environmentally friendly alternatives. This intervention has substantially reduced the volume of waste entering forest areas and eased the burden of waste collection and disposal.

Constitution of Eco-Task Forces

The Department has constituted Eco-Task Forces comprising Foresters and Forest Guards to undertake regular inspections of vendors, shops and commercial establishments operating in tourist areas. These teams monitor compliance with environmental regulations, seize prohibited plastic products and coordinate weekly cleanliness drives involving all stakeholders. Regular inspections and surprise checks have emerged as an effective deterrent against littering and environmental violations.

Waste Management Infrastructure

Adequate infrastructure is essential for sustainable waste management. Bear-proof garbage bins equipped with separate chambers for biodegradable and non-biodegradable waste have been installed at strategic locations, including parking areas, viewpoints, trekking routes and camping sites. Tourism Development Authorities have been requested to provide hoppers and collection facilities for waste generated by tourists. Ponywallas operating in remote areas have also been engaged to collect waste from designated bins and transport it to material recovery facilities.

Scientific Disposal of Collected Waste

The Department has established coordination mechanisms with local municipalities and urban local bodies to ensure scientific disposal of collected waste.

Municipal processing sites are being utilised for the regular transportation, segregation and disposal of waste generated at tourist destinations.

Biodiversity Management Committees

The active participation of local communities is indispensable for the success of any waste management programme. Biodiversity Management Committees (BMCs), already functioning in many rural areas, have been entrusted with the implementation and monitoring of solid waste management plans. These committees coordinate waste collection, ensure compliance with local regulations and mobilise community participation in conservation efforts.

In order to ensure the long-term sustainability of these initiatives, the BMCs have been imposing sanitation fees on waste generators, including commercial establishments and tourism-related activities. The revenue generated through these user charges is being utilised exclusively for sanitation and waste management activities, thereby enabling local communities to maintain forest areas and tourist destinations in a clean and ecologically sustainable manner.

Awareness Campaigns

Equally important is the need to foster environmental consciousness among residents, tourism operators and visitors. Extensive awareness programmes have been conducted in schools, colleges and tourist destinations to encourage people to minimise the use of plastic products and adopt environmentally friendly alternatives.

Sustainable Alternatives

Buy-back schemes for plastic bottles and packaging materials have been introduced to incentivise tourists to return waste rather than discard it indiscriminately. Simultaneously, the use of cloth, jute and other biodegradable carry bags has been actively promoted to reduce dependence on single-use plastics.

Protecting Kashmir's fragile Himalayan ecosystem is not merely an environmental necessity but an obligation towards future generations. Tourism and conservation must go hand in hand. The forests, rivers and meadows that define Kashmir's identity can continue to sustain livelihoods and inspire visitors only if immediate and collective action is taken to tackle the growing waste crisis.

Scientific planning, strict enforcement and community participation hold the key to preserving the ecological treasures of the Himalayas for generations to come. ●

ABOUT THE AUTHOR

Author is IFS (2006 Batch) Chief Conservator of Forests, Kashmir

Standing For Green Warriors

Indian Forest Service Benevolent and Welfare Trust



BY A K GOYAL

On 7 January 2026, Shri Jitendra Singh Shekhawat, a Forest Guard of the Rajasthan Forest Department, was killed in Dholpur District while confronting illegal sand mining. He was doing what forest field personnel across the country do every day, often without notice. His death left a family in need of immediate support while formal entitlements would take time to reach them. That silence is the reason for this article.

How it began, and how it stopped

The Indian Forest Service Benevolent and Welfare Trust was registered on July 22, 2008 under the Registration Act, 1908, by a group of Indian Forest Service (IFS) officers then serving at the Ministry of Environment, Forest and Climate Change in New Delhi. Its origin was itself a bereavement: the untimely death of an IFS officer had left his family in serious financial distress, and his colleagues decided that goodwill circulated by word of mouth was no substitute for a standing institution.

The Trust functioned for roughly a year. The intent had been sound; the machinery had not been built to survive its founders. Shri Shekhawat's death in January 2026 ended that dormancy.

What we have done

On January 24, 2026, twenty-three of us met at New Delhi and took the Trust apart to rebuild it. The original Trust Deed was comprehensively amended and registered afresh on February 11, 2026 with the Sub-Registrar-I, Kashmere Gate (Central), New Delhi. A new Governing Body was elected. Eight new Trustees were inducted. Two committees were constituted, one for the scrutiny and evaluation of assistance proposals, the other for coordination with State Associations and Forest Departments.

Four changes in the amended Deed are important.

First, and most importantly, the beneficiary scope was expanded. The Trust of 2008 was, in practice, an IFS officers' trust. The Trust of 2026 covers every forestry field person, Forest Watchers, Forest Guards, Foresters, Forest Range Officers, State Forest Service officers and IFS officers including those on contract and daily wages. This was not a gesture.

Second, membership of all IFS officers became automatic. The Trust is not a subscription club that one joins. It belongs to the Service.

Third, the functions of the Trustees and of the Governing Body were delineated, so that decisions could be taken quickly without the ambiguity that had paralysed the earlier body.

Fourth, a committee structure was created for the time-bound scrutiny of proposals, since a family in crisis does not need a decision that arrives correctly but late.

The infrastructure followed during 2026: a Permanent Account Number was obtained, a Chartered Accountant appointed, Vision and Mission statements adopted, the Trust's logo finalised, and the website www.foresttrust.in launched on 27 March 2026. An online assistance proposal form, donor acknowledgement receipts, monthly newsletters and a network of State Coordinators and Nodal Officers followed.

When forest protectors risk their lives defending India's forests, the revived Welfare Trust ensures their families receive timely support when tragedy strikes



Relief support for the bereaved family of a forest guard
Photo Courtesy: Nilotpal Baruah, Reader's Digest

Why we have done it

The case for this Trust rests on a simple asymmetry. The forestry field person carries the highest occupational risk in the conservation enterprise and the thinnest safety net around it. He walks into human-wildlife co-existence conflicts, into the path of the mining mafia, into forest fire, into smuggling operations, frequently unarmed, frequently alone, on modest wages, far from home. When he does not return, the compensation available to his family varies enormously from State to State, and the machinery of relief moves at its own pace.

What we have achieved

As at 31 August 2026, the Trust had received ₹23,44,178 from 464 donors since its revival. It had approved ₹22.85 lakh in assistance across ten cases and disbursed ₹19.35 lakh. The recipients comprised one Fire Watcher, six Forest Guards, one Forester, one Forest Range Officer and one Assistant Conservator of Forests, either injured or deceased in the line of duty. The wider achievement lies in the institution now operating behind these figures: a registered deed, governing and scrutiny bodies, a website, published donor and beneficiary information, monthly newsletters and a growing State network. The Trust has also taken its work to serving officers and probationers at IGNFA, Dehradun, engaged with the PCCF (HoFF), Odisha, and addressed the national conference of State Biodiversity Boards and Union Territory Biodiversity Councils in Chandigarh on 6 and 7 September 2026. These exchanges seek quicker reporting and verification of cases and wider awareness among field personnel.

What we propose to do

Three things, chiefly. We propose to build a corpus large enough that assistance is dependable rather than occasional. The gap remains immediate: as at 31 August 2026, ₹3.50 lakh of approved assistance in three cases awaited later instalments, subject to resources. The Trust has launched “Sankalp 10K” to encourage regular, voluntary contributions from serving and retired IFS and State Forest Service officers. Eleven colleagues had already pledged monthly contributions for three years when the campaign was launched.

We propose to widen the base of contribution beyond the Service itself. Applications for income-tax exemption remain under process; donors should not assume that a deduction is presently available. The Trust has submitted a proposal to the Ministry of Environment, Forest and Climate Change concerning support for forest field personnel’s welfare through corporate funding. Any claim that a contribution



Guarding the wild, at constant risk
Photo Courtesy: Nilotpal Baruah, Reader’s Digest

qualifies as corporate social responsibility expenditure under Schedule VII of the Companies Act, 2013 must depend on the applicable law and the particular activity. Outreach to public sector undertakings and forest-dependent industry continues.

We also propose to shorten the distance between an incident and our knowledge of it. The State Coordinator and Nodal Officer network depends on colleagues in the field reporting incidents promptly. The Trust has written to the Chief Ministers of Gujarat and West Bengal urging broad-based compensation policies for forest field personnel. Such State entitlements and the Trust’s immediate assistance should work alongside each other.

An appeal, and a close

Every contribution recorded above came from within a widening fraternity of officers and field staff. Each grant remains a token against what a family has lost. The Trust seeks to stand beside frontline personnel and their families at the moment they need support most. On National Forest Martyrs’ Day, when we remember those who died protecting forests and wildlife, a fitting tribute is to ensure that their families are neither overlooked nor left waiting for help. ●

Contributions to the Trust Corpus

IFS Benevolent and Welfare Trust. Account No.
30454625682 | IFSC: SBIN0007837 | UPI: ifsbwt@sbi
State Bank of India, CGO Complex, Lodi Road, New Delhi
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SCAN TO WATCH



Digital Transformation in Forest Management in Rajasthan

How DigiVan was built with help of Japan International Cooperation Agency, DXLab & Boston Consulting Group



BY KASTURI PRASHANT SULE

The history of forest management in India can be traced through several lenses – from the traditional tribal knowledge of forest-dwelling communities, to the spiritual and game reserves maintained by various dynasties, to the scientific principles introduced in the British era, and finally to the modern forest management practices that have evolved since independence. Over time, the priorities of forest management have shifted as well – from production, protection and conservation, to meeting primary livelihood needs, and now to supporting the spiritual and cultural wellbeing of a mentally and emotionally healthy society.

Today, forest management is a delicate balancing act: protection, conservation and law enforcement on one side, and public participation, accountability, and efficient, transparent service delivery on the other. In this era of e-governance and digitisation, with growing demands for transparency, efficiency and sustainable outcomes, forest management must adopt innovative practices that harness the latest available technology.

DigiVan is transforming forest management by bringing satellite data, AI, groundwater, canopy and land-use intelligence onto one powerful digital platform



Foreign Collaborations

The Rajasthan Forest Department, in collaboration with the Japan International Cooperation Agency's (JICA) DXLab and the Boston Consulting Group (BCG), developed DigiVan – India's first Digital Forest Stack – to build a data-based decision support system and impact-monitoring tool for the department. It also aims to be a transparent public-access system for the department's activities, opening up its data stack to spur innovation in the forestry sector. DigiVan represents a transformative step towards digital-first, data-driven forestry management.

In mid-2024, Sirohi division was chosen as the pilot division to develop a Proof of Concept (POC). Being posted as the Deputy Conservator of Forests, Sirohi, I had the opportunity to be part of this project from its pilot stage. Since it was an entirely new and innovative approach, we had considerable room to use our imagination and creativity while working to solve the fundamental challenges faced by the forest department.

Measuring Forest Health

The first Proof of Concept focused on forest health monitoring. The aim was to develop measurable parameters that could indicate whether forests had improved – qualitatively and quantitatively – over time. Parameters that change over time, such as canopy density, groundwater levels and land-use patterns, were selected as Key Performance Indicators (KPIs), with data from the Rajasthan Forest Department's FMDSS used as the baseline.

A web application was then built, layering freely available data sources such as satellite imagery from NASA, groundwater levels from the Water Resources Department, canopy density data from the Forest Survey of India (FSI), and revenue and forest boundaries from the Revenue Department.

How System Functions

The system draws on multiple Application Programming Interfaces (APIs) from different organisations, bringing together all publicly available information relevant to the forest department at

a single location, in a form field staff can easily understand. The interface was kept simple and intuitive, with users able to toggle layers on and off – making the system accessible even to range officers.

This POC supported several analytical and decision-making activities, including:

1. Understanding the impact of protection and plantation efforts over time – comparing canopy density, groundwater levels and other parameters helps demonstrate the impact of protection and plantation work in specific areas, offering visible proof of the often-unseen work done by field staff.
2. Monitoring encroachment and other illegal activities – tracking land-use change over time helps identify possible threats to forest land, such as the sudden appearance of habitations or an unexplained loss of canopy cover.
3. Providing baseline data for future planning, policy-making and problem-solving – by consolidating a holistic, multi-parameter analysis into a single portal, the system supports decisions on the causes of forest degradation, the feasibility and comparison of areas proposed for diversion (for both user agencies and the department), the design of plantation models to improve forest quality, and the identification and mitigation of threats to forests.

The Planning

Following the Forest Health POC, a Planning POC was developed, designed to be user-friendly enough for department staff at every level – from range officers to senior officials – to use in planning development activities, such as identifying viable areas for plantations

By connecting technology, field expertise and public data, DigiVan empowers forest officials to monitor ecosystems, detect threats and plan interventions scientifically



based on soil and rock type, slope, water availability, existing canopy density and fire vulnerability.

At its core, the idea behind DigiVan is simple: bring together all the data layers relevant to forest management onto a single platform, making the technology accessible even to ground-level staff and enabling data-backed, scientifically informed decision-making.

DigiVan, a Forest Stack

DigiVan also functions as a Forest Stack – a digital ecosystem that combines data, technology and governance to enhance forest cover, biodiversity conservation and community involvement, while motivating further innovation among startups, academia and conservationists. It is designed to offer a holistic view across multiple forest-related verticals and to enable rapid digital interventions in the forestry space. DigiVan has now been scaled up across the entire state of Rajasthan and made a public stack, increasing open accessibility and, with it, public accountability, transparency and citizen participation in forest management.

Being part of the team that developed DigiVan was a valuable opportunity to think through the fundamental, ground-level challenges faced by forest departments. Defining these challenges was essential – from the significant digital gap at the field level, to making the portal simple enough for field staff to use. Extensive field surveys were carried out to ensure the highest possible accuracy in training the AI model.

Errors Corrected

For instance, areas cleared of weeds such as Lantana camara or Prosopis juliflora were initially flagged as a loss of forest cover, an error that had to be corrected; similarly, grasslands were classified as a distinct category, since they have lower canopy cover but very high ecological value. This process made clear that while technology stacks are powerful decision-support tools that can strengthen scientific forest management, they cannot replace the quiet, dedicated work of field staff in protection, plantation, wildlife conservation and more.

Innovations like DigiVan are set to become an integral part of citizen-centric public service and efficient, scientific, data-driven forest management in the years ahead. As the first digital stack of its kind in the country, DigiVan's continued use – along with the feedback and experience it generates – will not only benefit current users but also inspire further innovation in forestry for generations to come. ●

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Women's Knowledge and Sustainable Forest Governance



BY MEENAKSHI
NEGI

मृत्युः सर्वहरश्चाहमुद्भवश्च भविष्यताम् ।

कीर्तिः श्रीर्वक्च नारीणां स्मृतिर्मेधा धृतिः क्षमा ॥

‘I am all-devouring death, and I am the generating principle of all that is yet to be. Among women I am fame, fortune, fine speech, memory, intelligence, steadfastness and patience’.

The above shloka from the Bhagvad Gita, says it all. It is the 34th shloka from the 10th Chapter, where Krishna tells Arjuna about the qualities that his feminine side consists of. He is not merely talking of the feminine, he is laying claim to the feminine and he attributes some of the most prized human qualities to his feminine side. Kirti or fame, Shri or wealth, vak or fine speech, smriti or memory, medha or intelligence, dhriti or steadfastness, Kshama or forgiveness.

At this stage itself I think I can rest my case because if Krishna himself has said it, what more remains to be said!

However, many people in this day and age of Gen Z may be shocked to learn that historically, philosophers like Aristotle, Hegel, Descartes and even our very own Manu, have considered women as property, objects, and exchangeable commodities.



Ms Kirti Chaudhary, Indian Forest Service (IFS)

Women have always been the silent custodians of India's forests. Now, their knowledge, leadership and lived experience must move from the margins to the high table

Such are the antecedents that women had to struggle against and continue to struggle even today at several levels, to lay claim to their rightful place in society.

Despite the fact that half of all human beings are women, they don't have a say in running world affairs. Anyone of lesser mettle would have given up long ago but not women. They continue to contribute to society in whichever way they can. Nowhere else is this more demonstrable than in the natural resources sector.

Reciprocity

Women enjoy a unique relationship with nature and that is reciprocity. They take from the environment in terms of food, fuel and fodder but give back in equal measure. Of the roughly 250-300 million Indians who depend on forests for some part of their subsistence, women contribute an overwhelming share of collection labour, and hold the deepest working knowledge of species, seasons and sustainable collection. When a forest degrades, the first tax is levied on women's time: collection rounds lengthen by hours, and those hours are taken from farm work, schooling of daughters, and the rest.

Data shows that of all the human deaths that happen due to conflicts with wild animals in forest fringe villages, almost 80% are that of women. These data points tell a story. The story of the gendered landscape in and around forests revealing dis-empowerment of that section of society that has the most organic links with the forest ecosystem. Women have always been an integral part of the forest landscape but have been noticeably absent from its governance.

Forest Governance

For most of India's forestry history, governance has been designed as if this reality did not exist. Working plans, patrolling rosters, committee constitutions and benefit-sharing formulas though written in gender-neutral language, in practice, defaulted to male participation. Even wild animal conflict is referred to as man-animal conflict though of late people have started using the term human-animal conflict. The result is a paradox the country can no longer afford: the people most dependent on forests, most knowledgeable about them and most invested in their regeneration have had the least formal authority over how they are governed.



People's Participation in forest Management

People's involvement in forest planning got a fillip under the policy plank of the Joint Forest Planning and Management (JFPM). Over one lakh Committees were formed covering over 20 million hectares of forests, nationwide, from the 1990's onwards.

Its most consistent but least advertised finding concerns women. Wherever Village Forest Committees and Van Suraksha Samitis moved beyond token membership and placed women in decision-making roles, as president, secretary, treasurer etc, it was seen that regeneration outcomes, protection compliance and the fairness of benefit-sharing improved measurably. Landmark field research by Bina Agarwal and others found that committees with a critical mass of women in their executive ie, roughly a quarter to a third were genuinely active and showed significantly better outcomes in terms of forest protection and sustainable use.

The reasons are not far to seek. Women's approach to forests is different because they weigh a standing forest against household fuel, fodder, nutrition and health security, not against one-time timber or lease revenue. They favour rotational and regulated harvesting because they are the ones who must return next season. Odisha's thengapalli tradition which involved women patrolling community forests by rotation, a lathi passed from household to household, resulted in regeneration of Sal forests for decades with no budget line at all. In Karnataka they agitate against large scale mining because the run-offs from such areas pollutes the water bodies from where they fetch drinking water.

The Gap between the Law and its Practice

Even when the law mandated to have a certain percentage (33-50%) of women members, the women's voices were neither recorded nor heard, because of the gap between the law and its practice. The gap is in the lack of adequate institutional strength. The meetings of JFM committees record women as present but the minutes of these meetings are disquietingly silent on what those women said! This should not surprise anyone who has worked in the field and has attended these meetings. They are overwhelmingly dominated by the vociferous and powerful majority in the village consisting mostly of upper caste men.

The SHG movement has shown us that women's collectives, given decision making and financial authority, outperform on repayment, transparency and asset maintenance. The same is true of the livelihood economy growing around forests. Van Dhan Vikas Kendras, NTFP value-addition enterprises, nursery raising, biochar and agroforestry-linked incomes are overwhelmingly operated through women's Self-Help Groups. This is a lesson for forest institutions.

The Road Ahead

Forests play a vital role in maintaining ecological balance, conserving biodiversity, supporting livelihoods, and addressing climate change. Across India, women including women professionals have made significant contributions to forest conservation, sustainable resource management, wildlife protection, environmental governance, and community engagement. Their experiences, leadership, and knowledge systems though largely undocumented, have enriched forestry practice and policy at multiple levels. Their leadership in conservation, conflict resolution, community participation, technology adoption, and institutional development has significantly shaped the forestry sector. However, there remains a need for greater documentation and dissemination of these experiences to inspire future generations and inform policy and practice.

Today, the emphasis has shifted from women's development to women lead development but this vision can be realized, only when the agency of women is recognised, promoted and given its due place at the 'high table'. Nari Shakti must move beyond mere sloganeering to genuine engagement. ●

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Bridging The Digital Divide

How Van e-Seva Kendras are providing employment and improving community participation through citizen-centric governance



BY DR PRABHU NATH SHUKLA

Digital governance has transformed the way public services are delivered across India. However, for thousands of people living in remote forest villages, access to these services continues to remain a challenge due to poor connectivity, digital illiteracy, and the absence of service centres. Recognizing this gap, Pench Tiger Reserve, Maharashtra, introduced the innovative concept of Van e-Seva Kendra—a village-level, one-stop digital service centre dedicated to providing forest department services and other essential government services directly to forest-dependent communities. The project was started during 2023-24. The initiative represents a unique blend of technology, community participation, and decentralized governance. It not only delivers digital services at the doorstep of villagers but also generates local employment, strengthens community participation in conservation, and improves trust between the Forest Department and local communities.

The Challenge

Pench Tiger Reserve comprises 39 buffer villages, many of which are inhabited predominantly by tribal communities living in remote locations. Before the introduction of the Van e-Seva Kendras, villagers had to travel long distances to taluka headquarters or forest range offices to access online services. Limited internet connectivity, low smartphone penetration, and inadequate digital literacy further compounded the problem. Even for small compensation claims related to human-wildlife conflict or crop damage, villagers were required to physically visit government offices with documents. This process was time-consuming, expensive, and often discouraged people from applying for legitimate benefits. Simultaneously, forest range offices experienced increasing administrative workload as officials had to assist citizens with online applications that were intended to simplify service delivery.

The Innovative Solution

To overcome these challenges, Pench Tiger Reserve conceptualized Van e-Seva Kendra as a decentralized digital service delivery platform at the village level. Selected village residents provided space within their homes or community premises where the centres were

established. They were trained by the Forest Department to operate digital systems and deliver various online services. Each centre was equipped with computers, printers, scanners, UPS systems, and internet connectivity through CSR support. Besides online applications, physical records and forest-related information not available on digital platforms were also made accessible at these centres. Plans were also initiated to integrate the centres with the Aaple Sarkar Portal, thereby expanding the range of citizen services available under one roof.

A One-Stop Digital Service Centre

The Van e-Seva Kendras function as integrated service centres providing both forest department and other government services. Citizens can access: Online applications for forest department services such as compensation claims, solar fencing assistance, and Malaki cases revenue department services including e-7/12 extracts and Form 8A, forest boundary maps, forest land records and related information, by bringing these services to the village itself, the initiative has significantly reduced travel time, transaction costs, and dependency on distant government offices.

Empowering Communities

The initiative emphasizes on community empowerment. Operators were selected on basis of educational



A Van e Seva Kendra at Pench Tiger Reserve, Maharashtra

qualification, residence within the village, Gram Panchayat and Eco-Development Committees' advice, BPL card, and preference for women. The initiative also promoted social inclusion. All operational centres are managed by individuals belonging to backward communities, while women own a significant number of centres. Besides creating sustainable livelihood opportunities, these operators have emerged as trusted digital facilitators and ambassadors of the Forest Department within their communities.

Building Digital Capacity

The success of the initiative rests on continuous capacity building. Every operator receives specialized training in handling forest-related digital services, maintaining digital records, and assisting villagers in accessing government schemes. A dedicated coordinator acts as a bridge between the Forest Department and village operators, while a dedicated WhatsApp group enables rapid communication and problem-solving. Regular refresher training and feedback mechanisms ensure continuous improvement in service quality and operational efficiency. These centres are providing responsive and transparent public services even in remote forest landscapes.

Transforming Grassroots Governance

The impact of Van e-Seva Kendra extends far beyond digital service delivery. The initiative has fundamentally transformed the relationship between government institutions and forest communities. Villagers now receive services closer to home, reducing bureaucratic delays and financial burden.

Range offices experience significantly reduced workload, allowing field staff to focus more effectively on conservation and protection activities. Improved transparency and accessibility have strengthened public confidence in the Forest Department, leading to enhanced cooperation between communities and conservation authorities. The centres have also promoted digital literacy and encouraged greater use of technology among rural populations, helping bridge the longstanding digital divide in forest villages.

Community Awareness

Extensive awareness campaigns were conducted through print media, digital platforms, village meetings, and public announcements to ensure that every eligible beneficiary was informed about the services available. Transparency remains a central pillar of the initiative. Citizens can provide feedback through the official website, suggestion boxes placed at the centres, and periodic review mechanisms. Feedback is regularly

From remote forest villages to digital access, Van e-Seva Kendras bring government services to people's doorsteps, bridging the digital divide while strengthening livelihoods and conservation

analysed, and appropriate improvements are incorporated into the system, ensuring that the centres continue to evolve based on community needs.

A Replicable Model for India

In Pench currently 10 centres are working. Tadoba Andhari Tiger Reserve replicated the model and established 20 centres during 2025-26. Recognizing its wider applicability, Pench Tiger Reserve has developed a comprehensive toolkit for replication. The model is particularly relevant for protected areas and remote forest fringe villages where access to digital governance remains limited.

The initiative aligns closely with India's vision of building a digitally empowered society by ensuring that even the most remote communities benefit from e-governance. With appropriate institutional support and community participation, the Van e-Seva Kendra model has the potential to transform public service delivery across protected areas and rural landscapes throughout the country. Considering the relevance and potential for the kendras in mitigating conflict situation.

Inclusive Model

Van e-Seva Kendra demonstrates how a simple yet innovative idea can simultaneously improve governance, promote livelihoods, strengthen conservation partnerships, and bridge the digital divide. By bringing technology closer to people rather than expecting people to travel to technology, Pench Tiger Reserve has created a citizen-centric governance model that is inclusive, transparent, and sustainable.

The initiative stands as an example of how digital innovation can be adapted to local realities, empowering forest-dependent communities while strengthening institutional efficiency. As India advances toward digital governance, the Van e-Seva Kendra offers an inspiring roadmap for delivering public services to the last mile, ensuring that no citizen is left behind. ●

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Mud on the Boots

Why Field Science must drive foresters in India



BY DR SONALI GHOSH

We are living in an era of tech-savvy IFS officer trainees, many of them engineers, who are intelligent, capable, amicable, and equipped to address complex real-world challenges. Their success in clearing one of the toughest competitive examinations (UPSC) is a testament to their merit. Yet, it is concerning that field-based learning is increasingly receiving less attention, even though it should remain the backbone of our service.

The forest is our office, not merely the backdrop to reports and deadlines; its realities must be understood through firsthand experience. Being an engineer is certainly no impediment, some of our finest foresters and naturalists have come from non-forestry backgrounds, but we must ensure that the spirit of learning from the forest never withers away.

All the technology that has come in; camera traps, drones, GPS collars, AI-based image recognition must not make us forget a simple truth: it was the foot soldiers who made India's forests what they are. From Kailash Sankhala's hand-rearing of tigers to Saroj Raj Choudhury's pugmark census, to Sanjoy Deb Roy's pygmy hog reintroduction plans, it has been trials, failures, and hard-won successes on the ground that have driven forest management in India.

The backbone of this legacy is knowing the jungle *from within* the forest: the trees and grasses, the birds and animals, what they eat, how they smell, and how they behave. No textbook can fully teach this, and no technology can entirely match it. It is learned only

when foresters and field staff roam the forest day after day, season after season.

Kaziranga Rhino Model

The Kaziranga's rhino-conservation model rests on sustained field presence, disciplined foot patrols and intelligence-led surveillance. From fewer than a dozen rhinos in the early 1900s, around 12 in 1908, the park has grown to 2,613 greater one-horned rhinos in the 2022 census, the world's largest single population. In the 1930s, Assam's pioneering forest officer Mahi Chandra Miri, one of the first Assamese officers selected for the Imperial Forest Service, introduced hilltop observation, watchtowers and rapid ambush-based responses to poachers.

That foundation evolved into an extensive network of anti-poaching camps and more than 1,500 frontline personnel, combining local knowledge with relentless patrols through grasslands, wetlands and riverine forests. After recording annual poaching peaks of about 25-27 rhinos in 2013-14, Kaziranga reported zero 2 straight rhino poaching years since January 2024 and counting! demonstrating how boots on the ground, early warning and institutional commitment can convert field intelligence into conservation success.

Pugmark Census

The pugmark census technique, pioneered by Saroj Raj Choudhury in the early 1970s, was the first systematic method to estimate tiger numbers across India. While scientifically imperfect and later replaced by camera-trap and genetic methods after 2004, it was "good enough" to galvanize Project Tiger and give the country its first credible picture of tiger distribution and status. More importantly, it forced forest staff to learn individual tigers by their tracks, movement patterns, and territorial behaviour, knowledge that still underpins anti-poaching patrols and conflict management today.

Choudhury's daily logs of the hand-reared tigress Khairi yielded insights into tiger pheromones and social behaviour that later informed broader research. Hand-rearing and translocation: Kailash Sankhala's work with tigers, both in zoos and in the



Forest Range Officer G. Venkatesh

wild, combined hands-on rearing, translocation experiments, and field observation to shape early tiger management under Project Tiger.

From Local Skill to Scientific Tool

Traditional bustard trappers in Rajasthan and other grasslands once spent hours hidden behind bushes or artificial covers, patiently waiting to capture birds by hand or simple snares. This intimate knowledge of bustard behaviour, flight paths, and habitat use has now been repurposed for science: biologists use modified trapping and tagging protocols to fit satellite transmitters, collect blood samples, and study migration and breeding ecology of endangered species like the Great Indian Bustard.

The old trapper's patience and fieldcraft remain central to modern conservation research. In many landscapes even today, forest guards work with local herders, honey collectors, and fisherfolk, using their ecological knowledge to locate wildlife, detect illegal activity, and design better protection strategies.

Controlled Burning

Controlled or prescribed burning is often presented as a technical exercise, but in Indian grasslands and dry forests it rests on generations of field observation. Veteran foresters and frontline staff know which grass patches burn hot, which hold moisture, where fire lines must be cut before summer, and how to stagger burns to get a flush of fresh grazing for herbivores in the monsoon.

This “grass sense” determines where fire lines are laid, how wide they must be, and when burns are safe decisions that protect both wildlife and nearby villages. Across Gir, Kanha, and other reserves, frontline staff map and maintain fire lines based on local topography, wind patterns, and past fire behaviour, integrating traditional knowledge with modern fire-risk mapping.

Pygmy Hog Recovery

The story of the pygmy hog, one of the world's rarest suids, is inseparable from field-based experimentation in Assam's grasslands. After the species was rediscovered in the 1970s, conservationists like those associated with the Pygmy Hog Conservation Programme (PHCP), building on the spirit of field officers such as Sanjoy Deb Roy, in Manas National Park, Assam began capturing a few individuals to start a captive breeding programme. Decades of trial and error in diet, enclosure design, disease management, and soft-release protocols have now enabled the reintroduction of captive-bred hogs into Manas and



Technology may sharpen forest management, but only field experience teaches a forester to read the jungle, understand wildlife, and make informed decisions

other grasslands, slowly rebuilding a wild population once feared extinct.

Elephants, Friends of Forest Deptt

P. D. Stracey was a distinguished forest officer who served in the Assam Forest Department and later became Chief Conservator of Forests, Assam. Drawing on extensive field experience with elephants, he wrote ‘Elephant Gold’ in 1960s as a valuable account of their capture, behaviour, training, and management. Many of his insights remain relevant today, particularly for elephant care, habitat management, and the design of effective strategies for mitigating human-elephant conflict.

Tech Can't Replace The Boots

Technology amplifies field science; it does not replace it. Camera traps confirm what a tracker suspects from a pugmark; GPS collars validate movement patterns first guessed from repeated sightings; drones survey fire damage that field staff already know is vulnerable. But the starting point remains the same, a forester who can read the forest, its smells, sounds, and subtle signs and turn that into management decisions.

In that sense, ‘mud on the boots’ is not nostalgia; it is methodology. India's forest and wildlife successes, from tigers to rhinos to pygmy hogs rest on a foundation laid by those who walked the beats, experimented in the field, and learned the jungle from the inside out. ●

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IFS At The Frontline Of Climate And Disaster Resilience

The need for future-ready foresters for building resilience landscapes and communities and Forestry-led Nature-based Solutions for Suviksit Bharat 2047



BY DR SATENDRA

The twenty-first century is seeing a unique blend of climate change, environmental degradation, and increasing disaster risks. Around the world, instances of heatwaves, floods, droughts, forest fires, cyclones, and glacial lakes are becoming more common and severe. India is one of the countries facing such risks and is seeing the effects of disasters triggered by climate change in almost all regions of the country.

This calls for a change from being reactive to proactive approaches in the form of prevention, preparedness, and resilience building. Though creating resilient infrastructure becomes necessary for ensuring a safer future, it alone is not enough. The need of the hour also is making the natural infrastructure of the country stronger through its forests.

Importance of Forests

Forests do much more than store biodiversity and provide wood. They control water cycles, stabilize precarious slopes, decrease soil erosion, modulate climates, replenish groundwaters, help in storing carbon and also serve the livelihood needs of many people.

Mangrove forests safeguard the coastlines from cyclones and tidal waves, forests of Himalayas reduce the chances of landslides and floods, shelter belts reverse the process of desertification, whereas urban forests ease heat stress and increase environmental sustainability.



Image courtesy: Times of India

All of the above multi-purpose functionality makes forestry-related Nature-based Solutions (NbS) one of the most realistic, cost-effective and sustainable ways to create Climate and Disaster Resilience (CDR). Functional forests decrease disaster risks and also boost ecological security, increase water availability, conserve biodiversity and meet India's responsibilities towards the Paris Agreement and Nationally Determined Contributions (NDCs).

While moving forward to the dreamland of Suviksit Bharat 2047, India should not just strengthen its forests but also strengthen foresters. In order to protect ecosystems, save communities from various disasters and achieve sustainable development goals, we need a new generation of forestry professionals ready to solve all sorts of climate and disaster-related problems.

Climate & Disaster Resilience

Climate change has radically altered the responsibilities of the foresters. Although their traditional mandate of managing the forest in order to produce wood, conserve biodiversity and provide ecosystem services remains crucial, it is not enough to address the demands of the 21st century. The modern forester needs to be equally ready to deal with climatic uncertainties, disaster risks, landscape restoration, community vulnerability and resilience building. There should be a change in forestry education and research as well.

Forest Service is the only organization that possesses scientific knowledge, legal power, landscape-level management ability, and a well-established relationship with communities; thus, it is perfectly positioned to drive climate and disaster resilience efforts.

But the changing risk scenario requires new competencies, which are not typically included in any conventional forestry education program. The disciplines of climate science, disaster risk assessment, ecosystem-based adaptation, landscape resilience, geospatial technology, artificial intelligence, climate modelling and community resilience have become absolutely essential skills for modern foresters.

Thus, the modern forester needs to become an inter-disciplinary professional who can work at

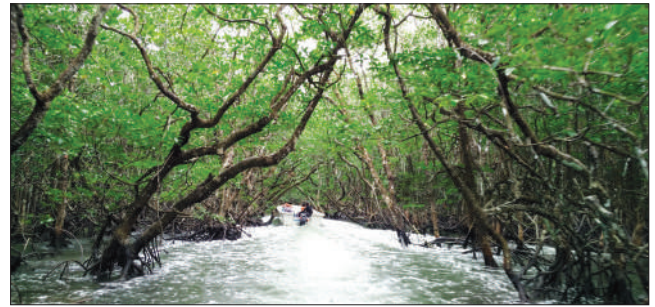
the crossroads of forestry, climate science, disaster management, water resource management, agriculture, biodiversity conservation, and rural development. They need to be able to undertake multi-hazard risk assessments of landscapes, identify ecosystems at risk, develop forestry-based Nature-based Solutions, improve ecosystem services and participate in climate resilience planning at the district and state level. Modern scientific forestry would have to include hazard mapping, vulnerability assessment, climate projections, and ecosystem restoration in addition to silviculture.

Technology innovations make it all the more necessary. Remote sensing using satellite, Geographic Information Systems (GIS), drones, Artificial Intelligence, sensors using IoT, and digital decision-making tools are changing the ways forests are monitored and managed. Forest fire forecasting, real time drought evaluation, landslides potentiality mapping, glaciers monitoring, watershed assessment and carbon accounting have become essential parts of modern forestry.

Forestry-backed Nature-based Solutions (NbS) have demonstrated their effectiveness in India on numerous occasions. Restoration of mangroves has led to significant mitigation of cyclones' effects on the exposed coastal areas. Watershed treatment and catchment management have increased the rate of groundwater recharge and helped mitigate floods and droughts. Afforestation and assisted natural regeneration have helped reduce erosion and stabilize slopes. Urban forestry measures help mitigate heat islands in rapidly developing urban areas.

A key move in making this possible would be the creation of a Centre of Excellence on Forestry for Climate and Disaster Resilience (CEF-CDR) at the Indira Gandhi National Forest Academy (IGNFA), Dehradun. This Centre would symbolise an investment in India's future resilience rather than yet another academy. The Centre would work as the apex centre of India in capacity building, research, policy formulation, innovations and international collaboration for climate and disaster resilience through forestry.

The Centre would help design unique training programs for IFS probationers and in-service officers, develop best practices for each region, conduct research on climate threats, create digital repository



of information, conduct simulation-based training and collaborate with NDMA, NIDM, LBSNAA, FAO, ICIMOD, CIFOR, and other International Centres of Excellence. It can lead in incorporating artificial intelligence, geospatial technologies, and decision-making systems in forestry plans, while acting as the nation's think tank for forestry-based Nature-based Solutions.

Roadmap for Climate and Disaster Resilience

What is needed is a shift from forest management alone to landscape management for building resilience. The forestry-led Nature-based Solutions need to be mainstreamed into river basin management, mountain ecosystems conservation, coastal zone management and city development and climate change adaptation plans. All afforestation and reforestation programs, watershed development projects, mangrove restoration schemes and urban green belts should be planned not only with ecological recovery objectives but also for minimizing the risks from disasters and building community resilience.

Thus, the forester of tomorrow will be far more than the simple manager of forests. Instead, they will be the leaders of climate resilience, the expert in ecosystem restoration, the risk manager, the technologically empowered planner, and the trusted partner of the local communities. The training of such professionals will need vision, innovation and sustained efforts at capacity building.

India is progressing on the path to achieving Suviksit Bharat 2047 and one thing which needs to be emphasized to all in the forestry community is that while forests are the green armour of India, foresters are the true green warriors of the country. Through the empowerment of the foresters with the knowledge and skills needed in the twenty-first century, India can create landscapes which are not only green but also resilient and prosperous. The road to making India a climate resilient country will eventually be determined not just by the forests but the foresters themselves. ●

ABOUT THE AUTHOR

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As climate risks intensify, forests are becoming India's natural armour—and foresters must evolve into climate warriors capable of building resilient landscapes and communities

Conserving Species, Securing Spaces: Reimagining India's Conservation Estate

From Protected Areas to a National Conservation Estate



BY DR. VINOD
B. MATHUR

Other Effective Area-based Conservation Measures, or OECMs, have emerged as one of the most important innovations in contemporary biodiversity policy. Under the Convention on Biological Diversity, an OECM is a geographically defined area outside a formally designated protected area that is governed and managed in

ways that achieve sustained, effective and long-term conservation of biodiversity.

The concept has assumed renewed significance following the adoption of Target 3 of the Kunming-Montreal Global Biodiversity Framework, which calls upon countries to conserve at least 30 per cent of terrestrial, inland water, coastal and marine areas by 2030 through systems of protected areas and OECMs. OECMs thus offer a means of recognising conservation outcomes wherever they occur, not only where conservation is the primary legal purpose.

India's Opportunity

For India, this is more than a new international reporting category. It is an opportunity to reconsider the architecture of area-based conservation itself. India has built a strong and globally respected protected area network, using a Biogeographic Planning Framework, over the past five decades. National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves remain indispensable to the survival of threatened species and the protection of representative ecosystems. Yet the ecological processes that sustain biodiversity do not stop at protected area boundaries. Species move across administrative jurisdictions; ecological systems function as continuums; and many areas outside the formal network retain high biodiversity value through community stewardship, institutional management or compatible land use.

India's Challenge

The true significance of reimagining India's conservation estate. The challenge before the country is no longer simply to increase the number or extent of isolated conservation sites. It is to secure ecological continuity across landscapes and seascapes,

strengthen buffers and corridors, maintain ecosystem functions, and support viable populations of species beyond the boundaries of formally protected areas. The transition is therefore from islands to networks, from individual sites to functioning landscapes, and from a protected area system to an integrated conservation estate.

Such a framework would also give practical meaning to India's commitment to the High Ambition Coalition for Nature and People and to the global 30 by 30 goal. Meeting a numerical target is important, but the quality, representativeness, connectivity and governance of the areas counted are even more important. A National Conservation Estate should not become an exercise in simply adding hectares. It should be guided by ecological priorities, credible evidence, long-term governance arrangements and respect for the rights and knowledge of local communities. The objective must be to conserve biodiversity where it persists, restore ecological functionality and secure essential linkages.

The phrase 'Conserving Species, Securing Spaces' captures this relationship. Species conservation cannot be achieved through recovery plans alone unless the spaces required for breeding, feeding, dispersal, migration and climate adaptation are also secured.

Conversely, securing land or water without clarity about ecological values may produce only nominal conservation. Effective policy must bring the two together: identify the species and ecological processes that require attention, and then secure the spatial systems needed for their long-term persistence. This is especially relevant where wildlife populations



Pride of Lions at Gir National Park

OECMs can move India beyond isolated protected areas, connecting landscapes, communities and ecosystems to secure biodiversity for generations

occur across mosaics of forests, farms, wetlands, infrastructure and settlements.

National Conservation Estate

Operationalising a National Conservation Estate will require careful institutional design. India first needs a clear national framework for identifying, evaluating and recognising OECMs in accordance with CBD and IUCN principles, while adapting the process to its constitutional, legal and administrative context. Recognition should be evidence-based, transparent and voluntary, and it should not weaken existing protections or become a route for relabelling degraded lands. Areas should qualify because they already deliver, or can credibly demonstrate, sustained biodiversity outcomes supported by durable governance. The burden of proof must therefore rest on conservation value and continuity, not merely on administrative convenience.

Ecological and Spatial Planning

Second, ecological and spatial planning must guide the process. Potential OECMs should be assessed for their contribution to ecosystem representation, landscape connectivity, threatened species recovery, wild species movements, climate refugia, watershed security and coastal resilience.

This will require stronger collaboration among forest and wildlife departments, biodiversity authorities, scientific institutions, local governments and sectoral agencies. Spatial databases and monitoring systems must be developed so that OECMs are not only identified, but periodically evaluated for ecological condition, governance stability and conservation outcomes.

Governance Central Issue

Third, governance must be treated as central rather than incidental. Many potential OECMs will be located in areas managed by communities or institutions whose primary mandates may not be biodiversity conservation. Recognition must therefore build trust, respect legitimate rights, and provide incentives for long-term stewardship. It should not impose an additional layer of control without corresponding support. The credibility of the OECM process will depend on whether custodians

see recognition as an affirmation of their conservation contribution and a pathway to technical, financial and institutional assistance.

National Conservation Mission

Fourth, the process should be led as a national conservation mission rather than as a short-term accounting exercise. Capacity building for forest and wildlife managers will be essential, particularly in applying OECM criteria, evaluating governance arrangements and monitoring outcomes.

State-level pilots can test methodologies across ecological and governance contexts before national scaling. Financing will also be necessary for baseline assessments, management support, restoration and monitoring. Public investment should be complemented by carefully designed partnerships, while ensuring that conservation integrity is never subordinated to branding or numerical claims.

Biogeographical Planning Framework

During the past fifty years, India has established a “Biogeographical Planning Framework”, one of the world’s most significant protected area systems. The coming decade offers an opportunity to build something broader: a National Conservation Estate that recognises every landscape and seascape making a measurable and enduring contribution to biodiversity conservation. Such an approach would retain protected areas as the secure core of conservation while extending recognition and stewardship across the wider countryside, freshwater systems and coastal and marine realms.

If the twentieth century was the century of protected areas, the twenty-first century must become the century of integrated conservation estates. OECMs provide the bridge between these two eras. By embracing this vision, India can move beyond counting conserved hectares towards securing connected landscapes, resilient ecosystems and thriving species populations.

OECMs provide the policy instrument; the National Conservation Estate provides the national vision. ‘Conserving Species, Securing Spaces’ should therefore become not merely the title of an article, but a guiding philosophy for the next generation of conservation policy and practice in India. ●

ABOUT THE AUTHOR

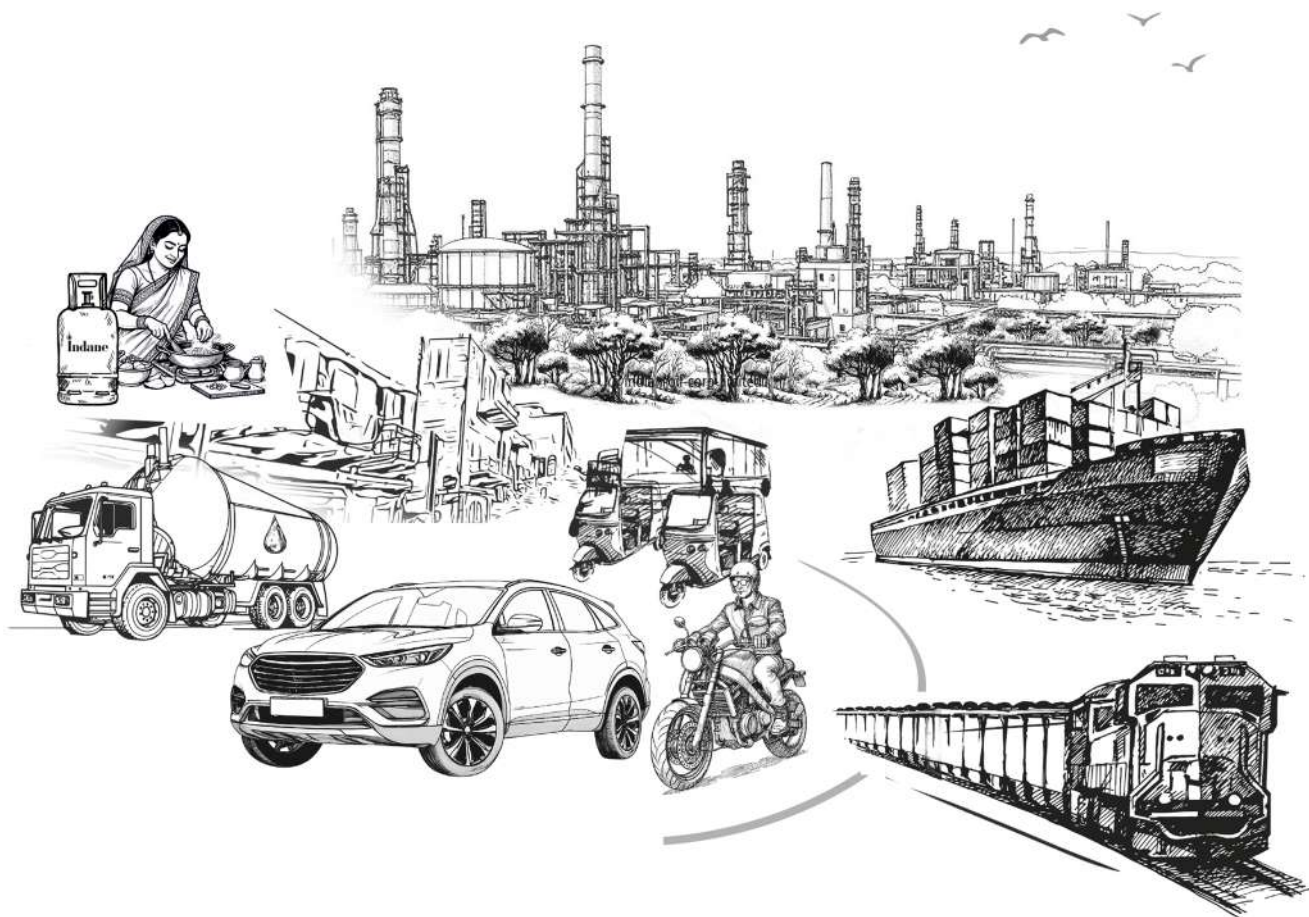
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Whispers of the Wild

Implementing the Spirit of Solid Waste Management Rules 2026 in Our Sacred Forests and Protected Realms



BY VIDYA
BHUSHAN KUMAR

I stood once on the banks of a stream that cuts through a protected forest in the Shivaliks, where the air still carries the ancient scent of sal and the calls of hornbills echo like forgotten prayers. The water was clear enough to see the pebbles below – until a plastic wrapper, bright and alien, drifted past like a wound on the skin of the earth. A young sambar paused, curious, then turned away. In that moment, the forest did not scream. It whispered – a soft, aching plea that has stayed with me through decades of walking these green cathedrals. It was a reminder that nature often suffers silently, and that the first duty of those entrusted with its protection is to listen to those silences.

Our protected areas and sustainably managed forests are living temples where biodiversity thrives, rivers carry life downstream, and centuries-old leaves filter the air we breathe. Yet solid waste – plastic that never dies – has become an uninvited guest. It clogs streams feeding tiger reserves, entangles elephants in buffer zones, and poisons soils nurturing medicinal herbs known to local communities for generations.

Across the Himalayan fringes and central Indian heartlands, unmanaged waste from tourism, pilgrimage

routes, and nearby habitations threatens decades of hard-won conservation. What begins as a discarded bottle or food packet can eventually become a much larger ecological burden, travelling through streams, soil and food chains.

The Solid Waste Management Rules, 2026 – notified by the Ministry of Environment, Forest and Climate Change and effective from April this year – arrive as a timely invitation to heal. Emphasising mandatory source segregation into four streams, decentralised processing, extended producer responsibility, and stricter safeguards against disposal near ecologically sensitive zones, these rules can become powerful allies of sustainable forest management and protected area governance.

Implemented with heart and precision, they can curb microplastics in rivers and food chains, lower fire loads in pine landscapes where waste becomes tinder, and ease pressure on stressed forest fringes. More importantly, they can help shift our approach from merely removing waste after it appears to preventing its accumulation in the first place.

Rules on paper are seeds without soil. Effective implementation demands stewardship beyond enforcement. In buffer villages I have visited, women self-help groups turn household waste into wealth – composting organics for community woodlots and channeling recyclables into dignified livelihoods. When waste workers – the often-invisible safai veers and rag pickers – receive identity, safety gear, fair pay, and formal integration, their hands become instruments of restoration and the first line of defence for our green spaces. Their knowledge of local waste flows and community behaviour can also become an invaluable resource for designing practical, locally appropriate systems.

The 2026 Rules offer a bridge. They enable forest departments and gram sabhas to create “green buffers” where waste is transformed rather than dumped, and communities become co-managers of waste streams and forest health. Van Panchayats in Uttarakhand or joint forest management committees can adopt waste stewardship in their micro-plans, monitoring dumping

When plastic enters the forest, it enters the food chain; protecting wilderness now demands waste management, community action and institutional responsibility



Clean forests begin with responsible choices. Stronger waste systems can protect rivers, wildlife, communities and the fragile ecosystems they depend upon



hotspots with the vigilance applied to illegal felling and linking waste-to-wealth enterprises with respectful ecotourism. Such an approach can make conservation a shared responsibility, rather than something seen as the exclusive domain of the Forest Department.

Hope has taken root. A women's collective collected trail plastic and turned it into eco-bricks for community infrastructure, cleaning the woods while building ownership. Trained youth run composting units that feed nutrients into CAMPA-restored patches. The forest responds to care. These examples demonstrate that communities do not merely need to be told what not to do; they can become active partners in creating solutions when given opportunity, support and recognition.

For the young foresters of IFSA – future guardians who will walk deeper into these landscapes – this is both challenge and opportunity. Implementation means integrating waste management into working plans, protected area management plans, and landscape strategies. It means advocating eco-sensitive zone regulations that treat waste infrastructure with the seriousness of mining or highways, listening to communities who have lived alongside these forests for centuries, and making the dignity of waste workers non-negotiable in every conservation programme. It also means recognising that waste management is not a peripheral administrative task, but an essential component of habitat protection, wildlife conservation and sustainable forest management.

Before healing the wider forest, we foresters must put our own house in order. Let every Forest Department

office, range headquarters, beat office, rest house and training centre become a living demonstration of plastic-free discipline and zero-waste practice. When our campuses and field operations embody the circular thinking we advocate, our voice carries authentic moral power. Grant frontline foresters real authority, modern tools, dedicated resources, and training in participatory waste governance. Empower this generation to weave waste stewardship into every sustainable forest management plan and protected area strategy, drawing on both progressive rules and the traditional knowledge of Van Panchayats, women's collectives, and forest-dwelling communities. Leadership in conservation must begin not merely with instructions to others, but with visible examples within our own institutions.

The forest remembers the hands that planted, the feet that patrolled, and the voices that spoke for the voiceless. Let it remember this generation – the one that refused to let plastic silence its rivers or dim its canopy. Implementing the 2026 Rules as healers who first set our own house in order restores the sacred conversation between humanity and the wild. It tells communities and visitors alike that conservation is not only about protecting what is beautiful, but also about accepting responsibility for the consequences of human presence in these landscapes.

Even a simple park manager's declaration – "Our forests are zero-landfill" – would shape how society and travellers view our conservation efforts, reinforcing that these precious forests are truly in safe, responsible hands. Such a declaration, however, must be backed by systems, monitoring and accountability. The words should become a commitment visible in every trail, watercourse, campsite, office and village adjoining the protected area.

May every student forester carry this whisper: the health of our protected areas and sustainably managed forests will be measured not only by the tigers we save or the carbon we sequester, but by the cleanliness of the streams that still sing through them, and by the pride in the eyes of the communities and foresters who stand as their true guardians. Conservation ultimately lives in these everyday details – in what we leave behind, what we restore, and what we teach the next generation to value.

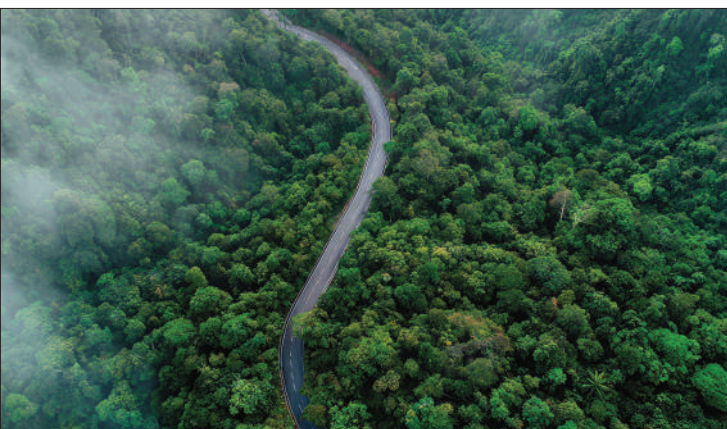
The forest is waiting. Let our actions answer with love, rigour, unwavering hope – and a Forest Department that leads from within. ●

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Author is IFS (1987 Batch), Special Monitor (Environment, Climate Change & Human Rights), National Human Rights Commission

Changing Dimensions of Forest Management

Need to reorient the governance & Rechristen the IFS As Indian Forest and Environment Service



The scenario of India's forests Management today is at cross road because of two main reasons. First the pressure of population for livelihoods/ smuggling coupled with developmental pressure requires diversion of forestlands. Second the developing global scenario due to deforestation, climate change and political economy of conflicting forest use and control needs a relook into policies and programmes. As on today India's forests and tree cover span approximately 80.9 million hectares, or nearly 25% of the country's geographical area.

Historically, forest management in India evolved from pre-colonial community-based systems to colonial-era focused on introduction of scientific management and timber production centric considering the priority of British empire under the Indian Forest Act of 1865 and later 1927. Post-independence, the emphasis shifted toward conservation/ social forestry after consolidation of princely forests.

NFP 1988, A Paradigm Shift

The National Forest Policy of 1952 and especially 1988 marked a paradigm change by prioritizing ecological security, biodiversity, and people's participation over revenue generation. The Wildlife Protection Act of 1972 and Forest (Conservation) Act of 1980 further strengthened protective frameworks. However, rapid socio-economic changes since the 1990s have introduced new dimensions that demand a fundamental reorientation in forest governance.

The 1988 National Forest Policy explicitly moved away from the colonial "production forestry" model from Timber centric Production to Multi-Functional Ecosystem Management. Today, forests are valued more for the ecosystem service, carbon sequestration, watershed protection, pollination, and soil conservation alongside timber and non-timber forest products (NTFPs) like indigenous medicines etc.

The initiatives like the Green India National Mission aims at to increase forest and tree cover over the entire landscape so that quality of natural forests as well as entire landscape improves, and sequester substantial CO₂ annually apart from meeting local needs. In this regards CAMPA funds have supported large-scale plantations, wildlife and local livelihoods. Further, forests are central to India's climate commitments of creating an additional carbon sink of 2.5-3 billion tonnes CO₂ equivalent by 2030. These challenges necessitate adaptive strategies, including climate-resilient species and landscape-level restoration.

The Joint Forest Management (JFM) committees involve local communities in protection and benefit-sharing and have been one of the reasons for the decentralized forest governance by empowered people covering roughly more than 30% of the forest area. While JFM has shown success in most of the states in regenerating degraded forests, implementation remains uneven and needs second generation reforms to empower better functioning communities under relevant Act.

Synchronize FRA & JFM

Another big challenge to synchronize the Forest Right Act (FRA) 2006 with the JFM as many beneficiaries who are non-tribals are dependent on the forests vested with tribal people under FRA. Noted foresters have been critically highlighting the faulty implementation of the FRA which is putting strains on the integrity of forests in their articles and presentations. The Act as such was intended as an instrument to correct historical injustice to tribal forest-dwellers—has been politicized and weaponized as land distributing mechanism to consolidate political hold in tribal belt.

Faulty implementation have encouraged fresh encroachments on forest lands in Madhya Pradesh,

Chhattisgarh, Maharashtra, Karnataka, Orissa and other states rather than genuine empowerment. This has transformed it into a driver of “ecological suicide” by fragmenting remaining forest carbon sinks, undermining regulatory oversight, and allowing post-2006 claims to carve up forests for political or short-term gains instead of securing pre-existing rights with proper investment on the vested lands.

Then the ticklish issue of balancing development needs with conservation of forest and biodiversity with regards to use of forests lands for infrastructure, power, roads, railways, mining, and urbanization. The Forest (Conservation) Amendment Act, 2023, though streamlines procedures for certain projects but exemptions like 100 km distance from border have led to genuine concern and petitions are pending in the Supreme Court.

The recent controversy on defining of Aravali hills over 100 meter height by a Committee set up by the Supreme Court under pressure from mining lobby of Rajasthan is a glaring example of this conflict but the hue and cry by environmentalist forced the Supreme Court to constitute another Committee led by ICFRE Director- General to re-examine the matter. Aravali hills are the lungs of this regional ecosystem in and around Delhi as also source of its water and already FSI had done in depth study on it. I must commend the then DG SFI Anoop Kumar who refused to agree with this 100 meter definition.

Additional Manpower & Infra Needed

The financial and human resources for tending the forests remain a issue of vital necessity. The field of Environment today is one of the fields like in defence which need additional man power and infrastructure. The regeneration in natural forests is not adequate in more than 52% of the forests and this situation demand timely shift in our afforestation policy and the department must create water harvesting structures in forests and adjoining areas for aquifer recharge and to maintain the flow of sub-surface water, streams and Rainfed rivers like Narmada, Cauvery and Godavari.

Foresters and local JFM committees/ Panchayats should be trained in technological proficiency like use of drone technology for all time real monitoring of fires, smuggling and go for climatic resilient planning and developmental strategies must be core of scientific management with stakeholder engagement and convergence with district administration, Gram Sabhas, NGOs, private sector, and other departments is very necessary.

Last but not the least; is the need for systemic Reforms in Forest Administration for better productivity? And



From timber-centric forestry to ecosystem management, India needs bold reforms that balance development, biodiversity, climate resilience and community participation.

for this futuristic reforms are essential in the organizational set up: The organizational structural hierarchy should be revisited and be made co-terminus with civil administration boundaries. This has been done in Tripura in 2014 by me and it need to be replicated. At the national level there is a need to merge the subject of Environment and **The Way Ahead**

The mandate of service should incorporate the subject of Environment and therefore, the service could be renamed as Indian Forest and Environment Service. Similarly Tribal development should be part of overall forest management. Then an eco-development & Cash crop board is also the need of the hour for better tourism, livelihood and revenue generation.

In the states also different wings should be independently created to be looked after by forest department staff and officers. The IFS leadership also need to rediscover the old camaraderie and get rid of mini silos so as to manage the forests with highest professionalism. For better research output a sub-cadre or a Central Forest Research Service should be created and as a first step ICFRE should be declares as Department of Forestry Research as proposed in the first Cabinet note in 1990 when ICFRE was made autonomous. ●

ABOUT THE AUTHOR

Author is IFS (1979 Batch), Tripura cadre & former Director General of ICFRE and Chairman of Centre for Resource Management and Environment

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Hamdard and the Responsibility Towards a Greener Future



BY MR. ABDUL MAJEED

At Hamdard, our commitment to healthcare has always been inseparable from our responsibility towards society and the environment. As an organisation rooted in the rich heritage of **Unani medicine and nature-based healthcare**, we have always recognised the deep relationship between human wellbeing and the natural world. Protecting our natural resources is, therefore, not merely an environmental responsibility for us—it is an integral part of our vision of building a healthier, more sustainable future.

It is in this spirit that our association with the **4th Eco Warrior Awards 2026**, organised by the **Indian Forest Service Association**, holds special significance for Hamdard. The Awards recognise the exemplary contributions of officers of the Indian Forest Service towards **forest conservation, wildlife protection and environmental stewardship**. The initiative also brings together senior government officials, policymakers and members of the Indian Forest Service, creating a meaningful platform

for recognising those who dedicate themselves to protecting India's natural heritage.

For an organisation like Hamdard, whose heritage and products have a strong connection with nature, the cause of conservation has a particularly deep meaning. The plants, herbs and natural resources that form an important part of traditional healthcare remind us that the wellbeing of humanity is closely linked to the wellbeing of our environment. Sustainable development must therefore be approached not simply as a business objective, but as a responsibility towards society and future generations.





Hamdard Laboratorie's farmland cultivating its own herbs and medicinal plants through sustainable farm practices

Zero Liquid Discharge (ZLD) System plant at the Hamdard Facility

Our “**Farm to Pharmacy**” philosophy, supported by **Hamdard Farms**, reflects this understanding. It seeks to strengthen the connection between cultivation, natural resources and responsible healthcare manufacturing. By nurturing this connection, Hamdard aims to preserve the value of medicinal plants while promoting responsible sourcing and sustainable practices. This approach represents an important link between the wisdom of traditional medicine and the contemporary need for responsible and sustainable production.

From medicinal plants to sustainable manufacturing, Hamdard is building a healthcare legacy where nature, innovation and environmental responsibility grow together



From Farm to Pharmacy, Hamdard blends traditional knowledge, modern science and sustainability to create healthcare that respects both people and the planet

Our sustainability efforts also extend to our manufacturing operations. Hamdard is embracing environmentally responsible technologies and practices, including the use of **renewable solar energy and Zero Liquid Discharge (ZLD)**, alongside a continuing focus on resource conservation and cleaner production. These initiatives reflect our belief that modern manufacturing must balance productivity and quality with responsible management of natural resources.

For us, sustainability is ultimately about creating harmony between **people, nature and progress**. The integration of traditional knowledge with modern science, sustainable agriculture and responsible manufacturing can help create an approach to healthcare in which environmental stewardship and human wellbeing move forward together.

The spirit of the **Eco Warrior Awards** resonates deeply with Hamdard because it celebrates responsibility in action. Forests, biodiversity and natural resources are not merely assets; they are part of the foundation upon which healthy communities and a sustainable society depend. The efforts of India's forest officers and



Hamdard's sustainability vision goes beyond healthcare—protecting natural resources, empowering responsible practices and recognising those who dedicate their lives to conserving nature

conservation champions remind us that meaningful environmental progress requires commitment, collaboration and a long-term vision.

At Hamdard, we believe that every organisation has a role to play in creating a greener future. Our responsibility is to continue strengthening sustainable practices across our journey—from our relationship with natural resources and medicinal plants to cultivation, manufacturing and resource management.

The path towards sustainability is a continuing journey, and there is always more to do. We remain committed to learning, innovating and strengthening our efforts so that growth is accompanied by greater responsibility towards the environment.

When we protect nature, we protect the foundation of life itself. This belief will continue to guide Hamdard as we work towards a future that is healthier for people, kinder to the planet and more sustainable for generations to come. ●



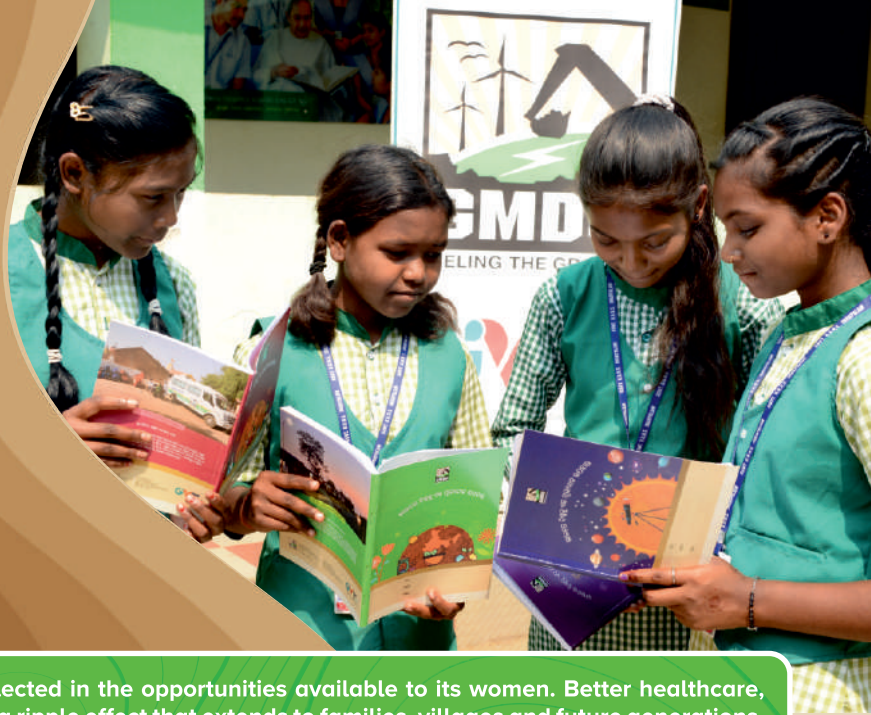
ABOUT THE AUTHOR

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GMDC
Gujarat Mineral
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(A Government of Gujarat Enterprise)

EMPOWERING WOMEN ENRICHING COMMUNITIES



The true strength of a community is reflected in the opportunities available to its women. Better healthcare, education, skills and livelihoods create a ripple effect that extends to families, villages and future generations. At Gujarat Mineral Development Corporation (GMDC), this belief shapes our approach to inclusive growth. By placing women at the centre of these efforts, we are helping remove barriers to opportunity, strengthen families and contribute to more inclusive development.

Transforming Lives Through Women's Healthcare



Women specific healthcare has become an integral part of GMDC's effort through CSR that transforms lives.

Gynaecological consultations, menstrual health awareness initiatives and the presence of female healthcare staff have helped create a more approachable healthcare environment, encouraging greater participation by women.

Today, women account for 59.1% of all consultations through our Mobile Medical Units, reflecting the confidence these services have earned within the

communities we serve.

We also believe that good health begins with awareness. Alongside medical services, we conduct Social Health Education programmes covering maternal health, nutrition, anaemia, diabetes, menstrual hygiene, breastfeeding, oral hygiene and healthy lifestyles, helping women and families make informed health choices and adopt preventive healthcare practices. Menstrual hygiene awareness programmes, complemented by sanitary pad distribution initiatives benefiting more than 13,000 women and adolescent girls, are further encouraging healthier practices within communities.

Creating Opportunities for Unrealised Potential

We believe meaningful development begins with education and grows through skills, livelihoods and equal access to opportunity. Through partnerships with institutions such as Atul Vidyalyaya and DAV Schools, we support stronger learning environments for

children living around our areas of operation.

Dedicated transport facilities help ensure that distance and safety do not become barriers to education, particularly for girls, allowing them to continue their studies with greater confidence. Learning is further strengthened through the Samarthya Skill Development Programme, which equips young people with practical skills that improve employability and prepare them for future opportunities. We are also working towards creating greater opportunities for women through entrepreneurship initiatives that encourage financial independence and sustainable livelihoods, enabling them to participate more actively in local economies. Street lighting and community infrastructure further improve safety and mobility, creating environments where women can learn, work and participate more confidently in community life.

Women Leading Change

Our commitment to inclusion extends beyond the communities we serve. Women contribute across healthcare management, environmental

functions and leadership roles within our Environmental, Social and Governance initiatives, bringing diverse perspectives to programmes that shape both community wellbeing and responsible mining practices.

Every woman who gains access to healthcare, every girl who continues her education, every young person who develops new skills and every family that builds a more secure future becomes part of a larger story of progress. We continue to contribute to the vision of Viksit Bharat @2047, ensuring that responsible mining goes hand in hand with responsible upliftment of women across the areas we operate.





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