

ISSN: 2584-2633

VANA PREMI



Nav Se Navvey Saal Tak Ke Bachhon Ka Saathi

Life Time Subscription - Rs.7500/-

Published Since 1994

Single Copy Rs. 75/-

Vol.27

JUNE - 2026

No.06



**Theme: "Inspired by Nature.
For Climate.
For Our Future."**

Gum Karaya (*Sterculia urens*)
Photo credit: Sri.S.Madhava Rao, DyCF TGFD

JOURNAL OF THE ASSOCIATION OF RETIRED FOREST OFFICERS, TELANGANA & ANDHRA PRADESH
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- ❖ The TGFDC has undertaken the ambitious task of developing Eco-Tourism activities within the State. Existing attractions open to the public include the Botanical Garden, Vruksha Parichaya Kshetram, Virtual Wildlife Safari and Pala Pitta Cycling Park in Kondapur, the Mahavir Nischalvan Eco-Tourism Centre in Vanasthalipuram, Aranya at the Shameerpet Deer Park, and Mrugavani at the Chilkur National Park. These initiatives are proving to be highly appealing, resulting in a growing influx of visitors.
- ❖ The TGFDC has also developed urban parks at Lalgadi Malakpet (Vanadrushyam), Thumkunta (Veduru Vanam), Gowdelli (Chandanavanam), and within the Chilkur Reserve Forest (Forestrekk Park).
- ❖ The TGFDC has introduced new commercial species within the Regional Ring Road region, including Seethaphal, Sandalwood, Red Sandalwood, Rosewood, Teak, and *Casuarina Junghuhniana*, among others.
- ❖ Corporate Social Responsibility (CSR) Initiatives 2021–2025: Empowering lives through the distribution of three-wheeler scooters to the differently-abled, support to schools with sports kits and furniture, and establishment of modern pre-fab health sub-centers — driving inclusive growth with care, commitment, and compassion.
- ❖ Eco-Tourism projects have been launched at various locations under the brand name of “Deccan Woods & Trails”.

Smt. Sunita M. Bhagwat, IFS

Addl. Principal Chief Conservator of Forests
Vice Chairman & Managing Director (FAC)
Telangana Forest Development Corporation Ltd.,
(A Government of Telangana Undertaking)

An English monthly on forestry, wildlife, environmental issues, and topics of general interest that blends in-depth knowledge with engaging content for all age groups.

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From the Editor's Desk...

Dear Readers.....

Greetings on the World Environment Day. In spite of the forecast of delayed monsoon, rains are forecast to hit Kerala earlier than normal. Hope the season has a normal or above normal rainfall. The theme for this year's Environment day (5th June) celebration is "Inspired by Nature. For Climate. For Our Future". Our June issue opens with an article on this very theme with detailed actions for everyone.

Biological and metabolic analysis of energy distribution by Tigers for various functions like hunting, reproduction and territorial protection etc is presented in a detailed manner in the next article. Results of effective management of Amrabad tiger reserve on its thriving population is another related article on this subject.

International day for dialogue among civilizations is observed on the 10th June. Present international conflicts would benefit well by heeding to take up dialogue rather than resort to conflict.

Foresters continue to be discriminated when it comes to giving recognition and rewards for their work. An article details the role played by foresters in nabbing Veerappan and the inordinate delay in rewarding the brave foresters. A related article highlights that the job of the forester is neither simple nor easy.

India is rapidly urbanizing and their thin green cover is fast vanishing. An article highlights this issue with examples from Delhi, Mumbai and Jaipur highlighting the need for greater focus on greening sustainability of urban cities. This brings us to the point of our green accounting that reportedly does not fully consider the social and livelihoods issues while counting trees planted. Unless communities and their livelihoods are an integral part of green transition, the long-term effects on communities would be disastrous.

Forestry, farming and livelihoods are very closely interlinked. While physical infrastructure, especially surface transport, is rapidly expanding, it is also indirectly affecting traditional farming. Alternates like agro/farm-forestry offers a viable option for farmers for both economy and to an extent to ecology.

International Biodiversity Day was observed on 22nd May. Pictures from the Mass seed ball preparation and distribution camp organized by the TGFDC, Drone training for students of FCRI Mulugu and Weapon training and Yoga training for forest beat officers form the colourful center pages.

Knowledge and application of Law is crucial in winning court cases involved in forest offences. An article details out that when Law enforcement is to be done, it is imperative that the concerned Forest Officer understands the nuances of law and applies the same, as otherwise the Forest Department would be put to embarrassing situation. A related article proves, with examples, how heavy smuggling happens with connivance and exploiting transit passes.

Dendrophiles, as all foresters are, still carry out their duties in spite of all the obstacles that come in their way. An ode is presented on the brave hearts through a poem. In addition, a true Vanapremi presents his memoir on the holy Seshachalam hills which combine spirituality and ecological conservation.

Fores lands and forests precede the settlements in many places. In erstwhile Nizam area, all documents were in Persian or Deccani and over a period of time, many claimants emerged contesting rights over forest lands. The Karlapalli saga highlights the dedicated efforts of foresters like KBR who fought with senior bureaucrats and politicians and ensured that the forest land did not fall in to wrong hands.

Regular columns like Green Quiz and Legal Note would continue to draw your attention and help sharpen your brains.

Happy Reading.....

Dr.K. Tirupataiah, IFS (Retd)

Editor



Restoring Ecological Balance through Nature-Inspired Solutions

Dr. D. Nalini Mohan

Introduction

World Environment Day, celebrated annually on June 5th, is more than just a date on the calendar; it is the United Nations' principal vehicle for encouraging awareness and action for the protection of our environment. Since its inception in 1973, it has grown to be the largest global platform for environmental public outreach, celebrated by millions across the world.

The planet earth stands at a critical juncture now. The "triple planetary crisis" of climate change, biodiversity loss and pollution loss are no longer distant threats but present realities. The 2026 theme, "Inspired by Nature," (led by 2026 host nation Azerbaijan) focuses on highlighting how nature-based solutions—using ecosystems themselves to solve human-created problems—are the key to land restoration, drought resilience, and reducing our carbon footprint. It signifies a shift from trying to engineer our way out of problems to collaborating with ecological processes.

Key elements of this theme include:

◆**Nature-Based Solutions (NbS):** Actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively.

◆**Land Restoration:** Healing degraded lands to enhance soil fertility, protect water sources, and sequester carbon.

◆**Drought Resilience:** Rebuilding natural landscapes to withstand water scarcity.

By learning from nature, humanity can harness the inherent capacity of forests to clean air, wetlands to purify water, and soil to store carbon, thereby

creating a sustainable future.

Global Scenario: A Planet Under Pressure

The global environment is currently facing immense strain. According to recent climate assessments, the world is dangerously close to exceeding 1.5 o C of warming above pre-industrial levels, a threshold that, if breached, could lead to catastrophic environmental impacts.

1. Land Degradation and Desertification

More than 2 billion hectares of land are currently degraded globally—an area larger than South America. This degradation destroys ecosystems, reduces agricultural productivity, and contributes significantly to climate change.

2. Loss of Biodiversity

The accelerating loss of biodiversity is undermining the foundation of ecosystems that provide clean air, water, and food. Marine ecosystems are also under siege, with ocean acidification and plastic pollution damaging coral reefs and marine life.

3. The Carbon Footprint Crisis

Despite global pledges, greenhouse gas emissions remain high. The shift toward renewable energy is occurring, but not fast enough to halt climate change.

The Indian Scenario: Challenges and Commitments

India is one of the most vulnerable nations to climate change. With a large population reliant on agriculture and a diverse, yet fragile, landscape, environmental degradation poses a direct threat to the country's development.

1. The Challenge of Land Degradation

India faces significant land degradation, with over 30% of its land undergoing degradation. This affects food security, livelihoods, and water availability, particularly in arid and semi-arid regions.

2. Deforestation and Forest Health

While India has shown an increase in forest cover in recent years, the quality and biodiversity of many forests are declining due to encroachment, infrastructure development, and forest fires. Recent studies on restoration of natural forests in different states have shown that though the forest is regenerated, the species richness is much short of the original scenario that existed for ages. This calls for introspection and allow the natural forests to sustain themselves without any anthropogenic disturbances.

3. India's Climate Action Plan

India has taken strong steps to address these challenges:

♦**Panchamrit Commitments:** At the COP26 summit, India committed to achieving net-zero emissions by 2070, reducing its emissions intensity, and increasing non-fossil energy capacity.

♦**Land Restoration Goal:** India has pledged to restore 26 million hectares of degraded land by 2030, a vital component of its environmental strategy.

♦**National Mission for a Green India:** Aims to increase forest cover, improve ecosystem services, and enhance carbon sinks.

Experts opine that all these are noble targets and achieving them is the big challenge.

The commitments at the international forums are unfortunately not translated into implementable action plans coupled with necessary budgetary support. This is a priority area for Government of India and the state governments especially when

India aspires to become the fully developed India (Viksit Bharat) by 2047.

Innovative Projects: The Path Forward

To achieve the goals of environmental protection and restoration, innovative projects are essential. These projects demonstrate how to apply technology and local knowledge duly involving all sections of the society to restore ecosystems.

1. Global Innovative Projects

♦**The Great Green Wall (Africa):** This massive initiative aims to grow an 8,000 km natural wonder across the width of Africa to combat desertification, create jobs, and restore land.

♦**Mangrove Restoration (Indonesia and Vietnam):** Using a method involving drone-based seeding to restore vast areas of mangrove forests, which act as carbon sinks and coastal buffers.

♦**Vertical Forests (Italy/Global):** The development of "Bosco Verticale" in Milan demonstrated how high-rise, tree-covered buildings can mitigate urban heat islands and improve air quality.

2. Indian Innovative Projects

♦**Indian Version of Miyawaki Method of Afforestation:** Pioneered by local groups and adopted by cities like Pune and Bengaluru, this method creates dense, native forests in small urban spaces, growing ten times faster than conventional methods.

♦**Restoration of the Arvari River (Rajasthan):** A landmark example of community-driven watershed management, where local communities built check dams (Johads) to revive a dying river and restore groundwater levels.

♦**Artificial Reefs in the Gulf of Mannar:** Scientists are using artificial reef structures to restore coral ecosystems, protecting marine biodiversity and supporting local fishing communities.

♦**Waste-to-Energy Initiatives:** Several Non-

governmental organizations and startup companies are converting agricultural waste (like stubble) into biofuel, reducing carbon emissions and providing farmers with extra income. Several innovative products from plastic waste to cloth, bricks and others are increasingly becoming popular in India. These trends have to intensified and focus should also be on reducing the usage of polluting materials like plastics and adopt ecofriendly life styles and build resilience in our societies that withstand the disturbances arising due to degradation of environment and forests.

3. Protecting Forests and Reducing Carbon Footprints

Protecting existing forests is far more effective than trying to recreate them. Innovative technology plays a crucial role here.

♦**AI for Forest Monitoring:** Remote sensing, drones, and Artificial Intelligence (AI) are being used to monitor deforestation in real-time in the Amazon and the Western Ghats.

♦**Regenerative Agriculture:** Shifting from chemical-heavy farming to regenerative practices—such as agroforestry—not only restores soil health but also turns agricultural land

into a carbon sink rather than a source.

♦**The Rise of Green Cities:** Cities are investing in green roofs, urban parks, and restoring urban wetlands to combat pollution and reduce the carbon footprint of urban living.

Conclusion

World Environment Day 2026, with the theme "Inspired by Nature," is a powerful reminder that our survival depends on the health of our planet. The global and Indian scenarios show that while the challenges are daunting—ranging from land degradation to climate change—innovative, nature-based solutions are available and effective. By supporting projects like the nature-based solutions, concern for biodiversity, educating children, sensitizing adults, restoring watersheds, protecting forests, and embracing sustainable lifestyles, we can restore the ecological balance. Every action, whether it is planting a tree, reducing plastic use, or supporting local environmental projects, contributes to a larger movement. As we look to nature for inspiration, we must remember that we are part of nature, not separate from it. Protecting the environment is ultimately about protecting ourselves and ensuring a habitable, vibrant world for future generations.

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Yes You Can

Anyone can carry his burden, however hard, until nightfall.

Anyone can do his work, however hard, for one day.

Anyone can live sweetly, patiently, lovingly, purely till the Sun goes down. And this is all what life really means

-Robert L. Stevenson.



Balancing Survival and Reproduction: Energy Trade-offs Shaping Tiger Ecology in India

R. Hemanth Kumar

Prologue

This essay is my ongoing endeavour to explore the diverse dimensions of big cat conservation in India, a journey where ecology, ethics, and diplomacy converge into a unified narrative of stewardship.

In this essay, *Balancing Survival and Reproduction: Energy Trade-offs Shaping Tiger Ecology in India*, I turn to the intimate calculus of life itself. It explores how energy trade-offs in tigers shape reproduction across India's diverse landscapes, revealing that reproduction is not merely biological, but an energy-budget decision shaped by prey abundance, territorial security, and disturbance. Conservation strategies must, therefore, prioritize prey availability, habitat integrity, and social stability to sustain tiger populations.

Together, these essays form a continuum of thought: from vision to symbolism, from diplomacy to grounded action, and now to technological transformation and ecological insight. Each reflects India's evolving model of coexistence between people and the wild, and its leadership in defining the ethics, practice, and innovation of global conservation.



Photo Credit: bigwildcats.com

Introduction:

The principle of energy trade-offs in reproduction is central to life-history theory in evolutionary biology. It emphasizes that organisms face constraints in allocating limited energy resources among survival, reproduction, and longevity. This concept did not originate from a single scientist but evolved gradually through contributions from multiple thinkers, beginning with Charles Darwin and continuing through modern ecological theory.

1. Origins in Evolutionary Theory

Charles Darwin's 'On the Origin of Species' (1859) laid the foundation for understanding reproductive trade-offs by introducing natural selection. Darwin recognised that organisms must balance competing demands to maximise fitness, noting that survival and reproduction are interconnected. Although he did not explicitly frame the idea in terms of "energy trade-offs," his recognition of biological constraints provided the conceptual groundwork for later developments.

2. Formalization of Reproductive Trade-offs

The mid-20th century marked the explicit articulation of reproductive trade-offs:

- **David Lack:** In his studies of avian reproduction, Lack proposed the "clutch size hypothesis," suggesting that birds lay the number of eggs they can successfully raise. This hypothesis highlighted energy limitation in reproduction and was one of the first clear demonstrations of trade-offs in nature (Lack, 1947).

- **George C. Williams:** 'In *Adaptation and Natural Selection*' (1966), Williams formalized the idea

that increased reproductive effort reduces future survival and reproductive potential. His work provided a rigorous evolutionary framework for understanding trade-offs as adaptive strategies shaped by natural selection.

- **Robert MacArthur and E. O. Wilson:** Their r/K selection theory (1967) expanded the concept by explaining the trade-off between producing many offspring with little investment (r-strategy) versus fewer offspring with greater parental care (K-strategy). This model captured the diversity of reproductive strategies across species and linked them to ecological conditions.

3. Modern Life-History Theory

Later ecologists refined these ideas into a comprehensive framework. Modern life-history theory emphasizes that energy is a finite resource, and allocation decisions determine survival, reproduction, and lifespan (Stearns, 1992). This perspective integrates physiology, ecology, and evolution, making energy trade-offs a central principle in understanding species' life histories. Today, the concept is applied broadly, from predicting population dynamics to explaining variation in reproductive strategies across taxa.

Thus, the concept of energy trade-offs in reproduction emerged gradually, shaped by the insights of multiple scientists. Darwin provided the foundation with natural selection, Lack introduced the clutch size hypothesis, Williams formalized trade-offs in life-history evolution, and MacArthur and Wilson expanded the framework with r/K selection theory. Modern ecology now recognizes energy allocation as a universal constraint shaping the diversity of reproductive strategies. This principle remains central to evolutionary biology, illustrating how organisms navigate the delicate balance between survival and reproduction.

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Energy Trade-offs in Reproduction: Applications in Indian Tiger Ecology

Introduction

Energy trade-offs in reproduction are a central concept in behavioural and evolutionary ecology. Rooted in life-history theory, the idea emphasizes that animals possess limited energy reserves, which must be strategically allocated among survival, growth, and reproduction. Investment in one function necessarily reduces the energy available for others, creating trade-offs that shape reproductive strategies. While the concept originated in evolutionary biology, it has been increasingly applied to large carnivores such as tigers (*Panthera tigris*) in India. Pioneering studies by researchers including K. Ullas Karanth, Yogesh Kumar Jhala, and Raghunandan Singh Chundawat have demonstrated how these trade-offs manifest in tiger populations, linking reproductive success to prey density, maternal investment, and territorial dynamics.

1. Theoretical Background

The concept of energy trade-offs emerges from the broader framework of life-history theory, itself an extension of ideas first proposed by Charles Darwin.

Darwin's principle of natural selection highlighted that organisms must balance competing demands to maximize fitness. Later ecologists formalized this into life-history strategies, emphasizing that finite energy must be divided among three primary functions:

1. Maintenance (survival)
2. Growth
3. Reproduction

As the evolutionary ecologist David Lack observed, "the number of offspring that can be successfully raised is limited by the resources available." This insight underscores the cost of reproduction: energy invested in producing and raising offspring reduces the energy available for survival or future reproduction.

Classic reproductive trade-offs include:

- More reproduction → lower survival
- More parental care → fewer offspring
- Early reproduction → shorter lifespan

George C. Williams further formalized these principles, showing that increased reproductive effort reduces future survival and reproductive potential. In large mammals, particularly apex predators, these trade-offs are amplified due to high energetic demands and ecological constraints. Tigers, being solitary and territorial carnivores, exemplify this dynamic in a particularly striking manner.

2. Tigers as a Case Study

Tigers are solitary, territorial apex predators. Their ecology makes reproductive trade-offs particularly intense.

A. Energy Trade Offs in Female Tigers

(i) High Cost of Maternal Investment:

Female tigers bear the primary reproductive burden, and the energetic costs are substantial. A tigress must sustain:

- Gestation lasting approximately 100–110 days.
- Lactation, which imposes one of the highest caloric demands in mammalian reproduction.
- Protection and rearing of cubs, often extending for up to two years.

During this prolonged period, tigresses must significantly increase their hunting effort to meet the nutritional demands of both themselves and their offspring. Yet, every hunting excursion carries risk: leaving cubs unattended exposes them to threats such as infanticide by males or predation by other carnivores. This creates a fundamental trade-off between energy acquisition and risk avoidance.

As K. Ullas Karanth has noted in his studies of tiger ecology, "*A tigress raising cubs must hunt more frequently, yet move cautiously, for every excursion away from the den exposes her young to danger.*" This observation underscores the delicate balance tigresses must maintain, expending energy to secure food while minimizing risk to their cubs.

The high cost of maternal investment explains why female reproductive strategies in tigers are inherently conservative. By prioritizing cub survival over litter size or breeding frequency, tigresses maximize the long-term success of their reproductive effort. This maternal burden also underscores the importance of prey-rich, undisturbed habitats, where tigresses can meet their energy requirements without exposing cubs to excessive risk.

(ii) Hunting vs Cub Protection:

Among the many energy trade-offs faced by tigers (*Panthera tigris*), none is more critical than the balance between hunting and cub protection.

For a tigress, reproduction is not simply about producing offspring; it is about sustaining them through a period of extreme vulnerability. This requires a delicate balance between acquiring food and safeguarding cubs from threats.

(a) The Dilemma

When a tigress leaves her cubs to hunt, she exposes them to significant risks:

- ▣ Infanticide by males: Rival males may kill cubs to bring the female back into estrus.
- ▣ Predation by other carnivores: Leopards and dholes pose threats to unattended cubs.

Yet, without hunting, the tigress cannot sustain herself or produce milk. Thus, she faces a fundamental trade-off: food acquisition versus cub safety.

(b) Adaptive Strategies

To navigate this trade-off, tigresses adopt several adaptive behaviours:

- Selecting secure den sites: Dense vegetation, caves, or secluded areas reduce predation risk.
- Reducing movement during early cub stages: Tigresses restrict their range to minimize exposure.
- Hunting in proximate areas: They target prey close to the den, balancing energy gain with cub protection.

These strategies reflect a conscious balancing of energy and risk, shaped by evolutionary pressures.

(c) Evidence from Indian Studies

Telemetry studies by Yogesh Kumar Jhala have provided empirical evidence of this trade-off. Data from radio-collared tigresses show that females with young cubs drastically reduce their home range, confining movements to areas near den sites. This behaviour reflects energy conservation and risk minimization, ensuring cub survival during

their most vulnerable stages.

Such findings highlight that tigresses are not merely passive victims of ecological constraints but active strategists, adjusting their behaviour to maximize reproductive success.

(d) Broader Ecological Implications

This trade-off has wider ecological consequences:

- Cub survival rates are directly linked to prey density and habitat security.
- Territorial stability influences female risk, as frequent male turnover increases infanticide.
- Human disturbance exacerbates the dilemma, forcing tigresses to move farther for prey and increasing cub vulnerability.

Thus, the hunting vs cub protection trade-off is not only a biological reality but also a conservation challenge.

Thus, the balance between hunting and cub protection epitomizes the energy trade-offs in tiger reproduction. By reducing movement, selecting secure den sites, and hunting nearby, tigresses demonstrate adaptive strategies to safeguard their offspring. Studies in India, particularly those using telemetry, confirm that this trade-off is central to tiger ecology. For conservationists, ensuring prey-rich, undisturbed habitats is essential to support tigresses in managing this delicate balance.

Key Insight: *“For tigresses, every hunt is a gamble, between feeding themselves and protecting their cubs.”*

(iii) Litter Size and Cub Survival

Tigers typically give birth to litters of two to four cubs, yet not all survive to adulthood. This outcome reflects a classic quantity–quality trade-off in reproductive ecology. Larger litters increase reproductive output but reduce the survival

probability of each cub, as maternal energy and protection must be divided among more offspring. Conversely, smaller litters allow for greater parental investment per cub, enhancing survival chances but reducing overall reproductive yield.

Long-term field studies in India have highlighted the precarious balance inherent in this trade-off. Raghunandan Singh Chundawat, in his decade-long research in Panna National Park, observed that high cub mortality is not an aberration but rather an integral part of tiger population dynamics. His findings underscore that reproductive success in tigers is shaped not only by maternal effort but also by ecological pressures such as prey availability, male territorial turnover, and predation risks.

In essence, the survival of tiger cubs depends on both maternal energy allocation and environmental stability. While tigresses may maximize reproductive potential by producing multiple cubs, ecological constraints often dictate that only a fraction reach maturity. This dynamic illustrates the evolutionary compromise between producing more offspring and ensuring the survival of fewer, better-protected young.

(iv) Reproductive Timing and Environmental Conditions

Tigresses do not reproduce indiscriminately; instead, they exhibit adaptive reproductive restraint that reflects the energetic realities of their environment. Successful reproduction requires substantial energy investment in gestation, lactation, and cub rearing, and these costs can only be met when ecological conditions are favourable.

Breeding is often delayed or suppressed in:

- Low prey density areas, where insufficient food resources make it energetically costly to sustain cubs.

- High-disturbance landscapes, where human activity or territorial instability increases risks to both mothers and offspring.

This restraint ensures that reproduction occurs only when energy availability is sufficient to support both the tigress and her cubs. Such timing reflects a strategic balance: conserving energy during unfavourable conditions and investing in reproduction when prey abundance and habitat security increase the likelihood of cub survival.

Long-term ecological studies in India have shown that tigresses in prey-rich reserves such as Nagerhole and Bandipur reproduce more frequently, while those in disturbed or prey-poor landscapes, such as Panna during its decline, often delay breeding. These patterns highlight that reproductive timing in tigers is not fixed but context-dependent, shaped by energy trade-offs and environmental pressures.

B. Energy Trade-offs in Male Tigers

While female tigers bear the primary burden of reproduction, male tigers face their own set of energy trade-offs that shape their reproductive strategies. As solitary apex predators, males must balance the demands of territoriality, survival, and reproductive success. These trade-offs highlight the harsh ecological realities of tiger life, where energy allocation determines both longevity and genetic legacy.

1. Territoriality vs Survival

Male tigers invest heavily in acquiring and defending territories, which serve as the foundation of their reproductive success. A larger territory increases access to females and mating opportunities, but this comes at a high cost:

- Higher energy expenditure in patrolling and scent-marking boundaries.
- Increased risk of injury or death from fights with

rival males.

This dynamic reflects a classic trade-off between reproductive success and longevity. A male that aggressively defends a large territory may sire more cubs but faces greater risks to survival. Conversely, a male with a smaller territory conserves energy and reduces conflict but sacrifices reproductive opportunities.

2. Infanticide as an Energy Strategy

One of the most striking examples of evolutionary energy optimization in male tigers is infanticide. When a new male takes over a territory, he often kills cubs sired by his predecessor. This behaviour, while ethically unsettling from a human perspective, serves clear evolutionary functions:

- Eliminates unrelated offspring, removing competitors for resources.
- Accelerates female reproductive cycles, as the loss of cubs brings tigresses back into estrus sooner.

In this way, infanticide maximizes reproductive efficiency in a competitive environment. As noted by Valmik Thapar, "The tiger's life is governed by harsh ecological realities, where survival and reproduction are inseparable from conflict."

3. Ecological and Evolutionary Implications

The energy trade-offs faced by male tigers have broader ecological consequences:

- Population stability: Frequent male turnover increases cub mortality, reducing recruitment into the population.
- Territorial dynamics: Energy invested in defence shapes the spatial distribution of tigers across landscapes.
- Conservation challenges: Human-induced disturbances that destabilise male territories can

amplify infanticide rates and reduce reproductive success.

Thus, the Male tigers exemplify the evolutionary principle that reproduction is inseparable from energy trade-offs. Territorial defence offers reproductive opportunities but at the cost of survival, while infanticide represents a brutal yet efficient strategy to maximise genetic success. Together, these behaviours illustrate the ecological pressures that govern tiger reproduction. For conservationists, understanding these trade-offs is essential: stable territories, prey-rich habitats, and reduced human disturbance are critical to minimizing conflict and ensuring sustainable tiger populations.

3. Evidence from Indian Studies

- K. Ullas Karanth: Demonstrated that prey density determines breeding success. Tigresses in prey-rich areas reproduce more frequently, linking energy availability directly to reproduction. (Ref: Karanth, K. U., Nichols, J. D., et al. (2004). *Tigers and their prey: Predicting carnivore densities from prey abundance*. PNAS)
- Yogesh Kumar Jhala: Using telemetry, revealed that tigresses with cubs reduce ranging during early cub stages, conserving energy while protecting offspring. (Ref: Jhala, Y. V., Qureshi, Q. (2005). *Ecology and Monitoring of Tigers in Corbett Tiger Reserve*. Wildlife Institute of India)
- Raghunandan Singh Chundawat: Documented high cub mortality and the effects of male turnover, highlighting instability in reproductive investment outcomes. (Ref: Chundawat, R. S. (2019). *The Rise and Fall of the Emerald Tigers: Ten Years of Research in Panna National Park*)

4. Energy Trade-offs in Tiger Reproduction: Insights from Indian Landscapes

A. Kanha National Park: Prey Abundance and

Reproductive Success

Kanha National Park is one of the most well-studied tiger landscapes. With high prey density, particularly chital and Barasingha, stable territories, and low human disturbance, Kanha provides an energy-rich environment. Research by K. Ullas Karanth has demonstrated that tigresses here exhibit shorter inter-birth intervals and higher cub survival rates. The insight is clear: abundant prey allows tigresses to reproduce more frequently and successfully, highlighting prey availability as the currency of reproduction.

B. Ranthambore National Park: Male Turnover and Infanticide

In Ranthambore, high tiger density leads to frequent territorial conflicts. Observations popularized by Valmik Thapar reveal that male replacement often results in infanticide, disrupting reproductive cycles. This underscores a harsh reality: energy invested in reproduction can be abruptly lost due to social instability. For tigresses, the reproductive payoff is uncertain, as cub survival depends not only on maternal effort but also on the continuity of male territorial dominance.

C. Tadoba Andhari Tiger Reserve: Behavioural Adaptation

Tadoba offers valuable behavioural insights into tigress strategies. Females with cubs restrict movement, increase kill frequency, and adapt to coexistence with human activity in buffer zones. Telemetry studies by Yogesh Kumar Jhala show that tigresses drastically reduce their home range during early cub stages, reflecting a conscious balancing of energy and risk. This demonstrates that tigresses are dynamic strategists, adjusting behaviour in real time to optimise energy use while minimising threats.

D. Bandipur Landscape: Landscape-Level

Dynamics

Bandipur, integrated with Nagerhole and Mudumalai, represents a connected landscape with a high prey base. Research indicates high reproductive success and stable population growth. The key insight is that landscape connectivity enhances energy efficiency, allowing tigresses access to resources while reducing competition. This highlights the importance of managing tiger habitats at the landscape scale rather than as isolated reserves.

Broader Ecological Patterns

Across Indian tiger landscapes, consistent patterns emerge:

1. Prey density determines reproduction; without prey, reproduction is delayed or suppressed.
2. Disturbance increases energy costs- human presence forces longer movements and reduces hunting success.
3. Social structure influences reproductive success- male turnover destabilizes populations through infanticide.
4. Habitat quality shapes life-history strategies - secure, prey-rich habitats enable frequent reproduction and higher cub survival.

Observations from Eminent Wildlife Biologists

- K. Ullas Karanth: *"Prey is the currency that drives tiger populations."*
- Yogesh Kumar Jhala: *"Carnivore ecology is fundamentally about managing risk and energy."*
- Raghunandan Singh Chundawat: *"Tiger populations are shaped as much by mortality factors as by reproduction."*
- Valmik Thapar: *"The tiger's story is one of constant negotiation between power and vulnerability."*

Conservation Implications

Understanding energy trade-offs provides actionable insights for tiger conservation:

- Ensure high prey density and prioritise habitat management to support ungulate populations.
- Protect breeding habitats-core areas must remain free from disturbance.
- Maintain social stability-avoid unnecessary removal of territorial males to reduce infanticide.
- Promote landscape connectivity- reduce fragmentation to enhance resource access and reproductive success.

5. Conceptual Takeaways

- Tigers follow an energy maximization strategy, reproducing only when conditions are favourable.
- Female strategy is conservative, maximizing survival of fewer cubs.
- Male strategy is opportunistic, maximizing mating opportunities.
- Ecosystem conditions, especially prey density, ultimately determine reproductive success.

6. Conclusion

Tiger reproduction in India is fundamentally shaped by energy trade-offs that vary across landscapes. In prey-rich environments such as Kanha and Bandipur, tigresses reproduce more successfully, with shorter inter-birth intervals and higher cub survival. In contrast, socially unstable reserves like Ranthambore often see reproductive investment lost to infanticide, as male turnover destabilizes populations. Tadoba illustrates behavioural adaptation in real time, where tigresses restrict movement and increase kill frequency to balance energy acquisition with cub protection.

Together, these case studies reveal that tiger reproduction is not merely a biological process but an energy-budget decision shaped by prey availability, territorial dynamics, and risk exposure. Across Indian landscapes, consistent ecological patterns emerge:

1. Prey density determines reproduction – without prey, reproduction is delayed or suppressed.
2. Disturbance increases energy costs – human presence forces longer movements and reduces hunting success.
3. Social structure influences reproductive success – male turnover destabilizes populations through infanticide.
4. Habitat quality shapes life-history strategies – secure, prey-rich habitats enable frequent reproduction and higher cub survival.

Strategically, tigers follow an energy maximization strategy, reproducing only when conditions are favourable. Female tigresses adopt a conservative approach, investing heavily in the survival of fewer cubs, while males pursue opportunistic tactics, maximizing mating opportunities even at the cost of cub survival. Ultimately, ecosystem conditions, especially prey density, determine reproductive success.

As studies by Indian wildlife researchers have shown, energy trade-offs are central to understanding tiger reproduction and survival. Conservation strategies must therefore focus on ensuring high prey density, protecting breeding habitats, maintaining social stability, and promoting landscape connectivity.

Key Insight: *“In tigers, reproduction is not just biological, it is an energy-budget decision shaped by prey, territory, and risk.”*

Author is a Retd Pccf, Uttar Pradesh / Special Monitor - Tribals, NHRC, M-94157 86586



In observance of International Day for dialogue among civilisations (June 10):

Civilisations endure by shared norms, not by power alone!

“Dialogue is the path to peace: where dialogue is missing, ignorance fills the void and rising voices of intolerance & xenophobia (amplified by online misinformation and hate speech) will be heard”

Dr B Raghotham Rao Desai

Prologue:

Way back in 1950-52 we had a subject in Intermediate-syllabus (under Osmania University) by name ‘Tearikh-e-Tamaddun’ (or ‘History of Civilisation’), the passing-marks of which, as also an allied classical language (either Sanskrit or Arabic or Persian) were not added to all other subjects to declare our ranks. However, I had spent years later observing international relations, and the parallels which were difficult to ignore ---- on **finding the Nations, much like individuals, were driven by pride, anger, insecurity, and rivalry** despite the presence of states men and diplomats: diplomacy, once measured & discreet having become increasingly performative!

Private conversations are seen spilling into the public domain, while strength is being projected through unpredictability, even rudeness ---- **which we see when the powerful engage the rest**: assistance being tied to conditions, partnerships being reduced to leverage, **moral language being replaced by transactional logic** (often describing as realism ---- through realism without restraint happens to be little more than instinct in formal attire, the danger being that when every interaction becomes a deal: trust begins to thin out). **Relationships** ---- whether personal or between nations ---- **cannot endure on calculation alone.**

Fact file:

Civilisations endure not by power alone, but by shared norms: restraint in victory, dignity in

conduct, and empathy in strength ---- to feast while one’s neighbour starves may signal wealth, but it reveals a deep moral failure. **Transactions may be inevitable but they need not define us** ---- when values accompany deals, and dignity tempers ambition: both individuals and nation move closer to something larger than success!

What seems to be changing today is not presence of transactions, but their tone ---- becoming harder, more explicit, and often more demanding: enflament replacing courtesy, while requests turn into expectations. What was once offered is now being claimed!

Growing up in the Telangana region of erst while Hyderabad state and subsequently serving for a couple of decades in Kalyana Karnataka, life was not free of give-and-take ---- but it was rarely this much calculated: **we shared space, food and time without keeping accounts; asking too much having been considered poor manners, while giving quietly used to be a virtual** Reciprocity existed, but it remained unspoken ---- wealth was not meant to be displayed: there being in fact theatrical attempts to conceal it!!

Epilogue:

Much of **everyday life runs on quiet transactions: we smile, expecting a smile in return; we offer help, hoping it will be remembered** ---- even our digital lives operating on reciprocity: life at one level being a series of transactions, and yet something in us resisting the reduction. Across

animal world, their young are baiwell taken care of instinctively, while care for the elderly, however, is uniquely human! (it serving no immediate biological purpose)! Civilisation begins where instinct is restrained by empathy.

Civilisations endure by establishing and maintaining shared norms, values, and traditions that foster social cohesion, trust and collective action ---- these shared behaviors often transmitting across generations, acting as 'structural stabilizers' (enabling societies to manage complex challenges, such as conflict; technological change, and resource management). **Shared norms ensure endurance by (i)** Social Cohesion and Trust, **(ii)** Constraint of Liberty for Stability, **(iii)** Intergenerational Transmission, **(iv)** Adaptive Regulation, and **(v)** Institutional Frame works, while the **Components of Enduring Civilisations** happen to be **(a)** Shared Identity, **(b)**

Mentifacts (i.e., shared values and benefits) over Artifacts, and **(c)** Responsibility and Stewardship.

Four Rules for a Civilisation That Endures can be enumerated as (1) A Civilisation must have an end-goal, **(2)** An end-goal must be non-destructive, **(3)** An end-goal should be clear for most people, and **(4)** The system requires limits and levers ---- **the core risk being Institutions outliving their virtues** (the outcome of the observation being that the **Institutions almost always outlive the virtues that created them**). The founders had virtues, but over time, bureaucracy replaces purposes ---- **most of them** (i.e., government, religion, scientific organization, or corporation) **have a single main idea behind!** The possible solution lies in aligning end-goals, strategy, and Institutional design with virtues acting as the system's core principles.

The author is a retired IFS officer of Karnataka cadre and the Chief Editor of 'VanaVikas', a quarterly magazine of the retired forest officers of Karnataka. M-9886157158.

Notice for General Body Meeting

The 112th General Body Meeting of the Association of Retired Forest Officers of Telangana and Andhra Pradesh will be held on 28th June 2026 (Sunday) at 10:30 AM in the Conference Hall (6th floor), Aranya Bhavan, Hyderabad. Elections will be conducted to all the posts/positions in our Association. All the members of the Association are requested to make it convenient to attend the meeting with their spouses.

- SECRETARY



FOREST PERSONNEL PLAYED KEY ROLE IN HUNTING DOWN VEERAPPAN

B.K.Singh

The peninsular India has seen one of the most dreaded poachers of wild elephants and smuggler of sandalwood of 1980s and 1990s in Veerappan. Along with his gang, he operated in the forests connecting Eastern and Western Ghats as well as in Western Ghats spread over the states of Tamil Nadu, Karnataka and Kerala.

Caught once by Police in a restaurant in Bengaluru in routine check-up ahead of 1986 SAARC summit, Veerappan escaped from Budhipadaga forest rest house custody, where he was undergoing interrogation. Thereafter, he remained elusive for nearly 18 years and continued poaching wild elephants for tusk and plundering sandalwood trees in the forests of Tamil Nadu and Karnataka. Based on credible information, many attempts were made by Police and Forest personnel of both the states to apprehend the brigand, but all failed. Lives of several forest and Police personnel from both states were lost in the process.

Between 1988 and 1991, this author was also in the task force to nab him, while working as Deputy Conservator of Forests, Kollegal. The 2,000 sq. km forests on hilly terrain in my division's jurisdiction along the right bank of river Cauvery and similar extent along the left bank in Tamil Nadu provided good number of hideouts for Verrappan and gang to stay and operate. The hideouts could be reached only by trekking through the jungle on very steep slopes. The road networks for vehicular movement were quite poor. Every operation to nab the brigand was carried out with personnel from both Forest and Police Departments, who were fit enough to walk up to the hideouts and safeguard

themselves from enemy's response. Forest personnel were better to trek inhospitable terrains as compared to policemen.

These days we have GPS to track the locations and we can move from one place to another in human areas without taking any other assistance, but I wonder whether GPS would work in thick forest areas without road and any human habitation. Forest Guards and Forest Watchers were our GPS in 1980s, 1990s and even at present. Without their active involvement and support, it was virtually impossible to trek the forests and succeed in any operation.

I remember 6th January 1990 incidence, while I was accompanied by Superintendent of Police of the district and fifty other Police and Forest personnel to recover huge quantity of sandalwood cut from Gopichettipalyam forests of Tamil Nadu and hidden in Karnataka's forests; the gang guarding the stock fired on us injuring two of the Policemen among us. We abandoned the search, as injured persons were to be shifted to hospital. That day we were moving in seven jeeps on cart tracks in the forests. Numerous such tracks are available inside forests, it was me and my forest personnel that guided the team out of the area. A month and half later, 65 Metric Tons of Sandalwood was recovered from the spot in a massive operation conducted by Forest and Police personnel of both the states. It is famous as 'Silvekal Seizure' in government circles. Many Forest and Police personnel in both the states were killed in a number of operations launched to nab the gang thereafter.

The war between brigand and both the states

went on for more than fifteen years and lasted till 8th October 2004, when Veerappan was eliminated in an encounter in Tamil Nadu forests near Dharmapuri. The final operation was planned and implemented by Sri.Vijay Kumar, IPS, the then Additional Director General of Tamil Nadu Police, who had to rely on hand-picked trusted team for the success of the operation. Both the state governments ordered to reward the officials of Police and Forest departments, who contributed in the fifteen years old long operation leading to elimination of Veerappan. Karnataka government order was made on 8th July 2005 indicating a reward of Rupees one lakh cash payment to an individual for every year of service with a cap of Rupees three lakhs and a site irrespective of the duration of the service. This order was implemented for Police Department personnel within years. Tamil Nadu, too rewarded all Police personnel involved in the operation and a few Forest personnel. This led to the discrimination as a large number of Tamil Nadu Forest personnel and all Karnataka Forest personnel went without reward.

Karnataka Forest Department, after a detailed enquiry recommended to government to reward 259 personnel, who rendered their services in fifteen years long operation. Government pruned this list and rewarded only six personnel, who were involved in the final operation to eliminate Veerappan. Several representations made by the remaining personnel were turned down by government and 32 personnel in 2015 approached Karnataka High Court for relief. Later 64 additional personnel also moved the Court for similar relief.

The Karnataka High Court in 2024 order said, "It is known the world over that Veerappan was not gunned down in a day, but it took several lives and several years, and several persons had risked their lives in providing information about

Veerappan from time to time. The state could have either rewarded all who were involved in hunting down Veerappan or not at all. It could not have trivialized the effort and courage of all those who were killed or who had survived the onslaught of the brigand by restricting the reward to only handful." Despite this order, government released reward for 12 petitioners and requested Court to review the remaining cases, saying that they were not the part of Special task force constituted to nab Veerappan. High Court of Karnataka on 21st April recently rejected the plea of the state and directed to grant the reward to all 96 petitioners.

State of Karnataka's plea to restrict the reward to those who were on duty in the final phase of the operation is bizarre. If this argument is extended none of the Karnataka Police personnel is entitled for the reward, as they did not take part in the final assault. Only Vijay Kumar ADG TN and his hand-picked team members are entitled for it and all other persons in Karnataka and Tamil Nadu Police Department would not be entitled. But the states have already rewarded them, then why the Forest department personnel are being discriminated against?

I hope the Karnataka High Court's April 21st order is taken by the state in the right spirit and the Forest personnel's twenty years wait is brought to an end. The value of Rupees one lakh of 2005 is hardly Rupees thirty thousand today. Since the Court in its order has not directed to pay the rewards with interest, government should consider it as an opportunity and set right the long pending discrimination at minimum cost. The persons to be rewarded are all senior citizens and quite a few have left the world. Government should take a moral high ground and comply with the direction of the High Court. It will go a long way in keeping the morale of present staffs high and send a positive

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The Task of the Forest Officer: Neither Simple Nor Easy

B. Vijaya Kumar

The uniform of a Forest Officer often evokes images of green landscapes, wildlife, and serene patrols. But behind that imagery lies a profession that is neither simple nor easy. In Andhra Pradesh, where the Eastern Ghats meet the coast, the role is tougher, riskier, and more complex than most imagine.

1. Custodian of a Living Asset: AP's forests cover 37,258 sq km — from Seshachalam's red sander tracts to Nallamala's tiger habitat, Papikonda's hill ranges, and Coringa's mangroves. The Forest Officer here guards India's only natural red sander forests, a species more valuable than gold in international markets. Custodianship means understanding fire ecology in Nallamala, regenerating red sander in Kadapa, controlling Lantana in Koundinya, and protecting estuarine systems along 974 km of coastline.

2. Law Enforcer in Difficult Terrain: Nowhere is enforcement more dangerous than in AP's red sander belt. Officers in Chittoor, Tirupati, and Annamayya districts conduct night patrols against armed smuggling gangs. Since 2013, AP Forest Department has lost over 20 staff in anti-smuggling operations — FROs, Guards, Watchers — many in Seshachalam. Add illicit felling in Nallamala, ganja cultivation in Alluri Sitharama Raju district, and annual forest fires from March to June, and every beat is a potential flashpoint.

3. Manager of Conflict, Not Just Forests: AP's forests touch 2,900+ forest-fringe villages and 5 major tiger-bearing landscapes. Human-elephant conflict in Chittoor and Parvathipuram Manyam, crop raids by wild boar in coastal districts, and leopard sightings in Tirumala are daily law-and-

order issues for Range Officers. Polavaram displacement, road widening through Papikonda National Park, and wind-power proposals in agency areas put officers at the intersection of conservation, tribal rights, and development. One diversion file can mean a High Court PIL the next day.

4. First Responder to Climate and Disaster: AP's geography makes Forest Officers multi-hazard responders. Cyclone relief in Krishna-Godavari mangroves, firefighting in Gundla Brahmeswaram, and flood rescue in Sabari-Godavari basin are handled by the same beat staff. New mandates pile on: CAMPA plantations to compensate for Polavaram and other projects, carbon stock assessments in Nagarjunasagar-Srisaillam TR, eco-tourism in Maredumilli, and People's Biodiversity Registers across 26 districts. With 25%+ frontline vacancies, one guard often patrols 15–20 sq km alone.

5. Alone, Yet Accountable to All : A Beat Officer or a FSO in Srisaillam works without phone signal or backup. Yet they answer to the AP High Court on red sander cases, NGT on Kolleru and Veligonda issues, CAG on CAMPA utilisation, and media on every tiger movement near Tirupati. Tiger numbers rose in NSTR to 80+ in 2024, red sander seizures crossed 5,000 tons since 2014 — but these wins rarely reach the public. Lapses, however, become breaking news.

Conclusion: A Calling, Not a Job

In Andhra Pradesh, the forest officer protects India's only red sander, the largest tiger reserve, and the lifeline of Krishna and Godavari. It demands the mind of a scientist for Seshachalam's ecology, the

grit of a soldier for night ambushes in Chandragiri Range, and the heart of a trustee for Chenchu tribes in Nallamala.

in AP chose duty over safety. Their task will never be simple. For AP's water, climate, and heritage — it must never be forgotten.

The Eastern Ghats endure because an officer

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signal for conservation and protection of forests and wildlife.

In the changing scenario, protection of forests and wildlife is becoming increasingly challenging. While sister departments of the state move for diversion of forests for so called legitimate projects, local inhabitants grab forest land with

the help and support of politicians. In the warming world, when temperatures are rising, the wildfires are becoming uncontrollable and impacting the regeneration and reproduction considerably. It is not the time to demoralize the forest staff at the cutting edge level. Without their active and sincere efforts, forests will continue to be degraded and fragmented.

B K Singh former head of Forest Force, Karnataka, M-94498 63501





Cities, Forests, and the Thin Green Line

Dr. Padam Parkash Bhojvaid

In the imagination of modern India, cities are symbols of progress—corridors of trade, governance, and tourism stitched together by highways and skylines. Yet beneath this narrative lies an increasingly urgent dilemma. The very forces that fuel urban growth—real estate expansion, infrastructure, mobility—often erode the ecological foundations that make cities liveable. Clean air, groundwater recharge, temperature moderation, and biodiversity are not incidental luxuries; they are the quiet systems that keep urban life breathable and humane.

Across India's large metropolitan centres, a few forested enclaves have survived this relentless expansion, functioning as ecological lungs embedded within concrete. In Mumbai, Delhi, and Jaipur—cities shaped by trade, governance, and heritage respectively—green landscapes such as Sanjay Gandhi National Park, the Delhi Ridge, and Jhalana Leopard Safari Park offer compelling case studies of how geography and urban character shape the fate of forests.

These three cities differ profoundly in origin and temperament. Mumbai grew as a maritime trading hub, its identity forged in commerce and cosmopolitanism. Delhi is a capital layered with political authority, demographic pressure, and symbolic weight. Jaipur thrives on heritage and tourism, its urban rhythm guided as much by history as by hospitality. Yet despite these differences, each city holds within it a green core that performs ecological roles far larger than its footprint suggests.

In **Mumbai**, Sanjay Gandhi National Park is an anomaly of global scale—a national park located

within a densely populated metropolis. Its forests cradle the Tulsi and Vihar lakes, crucial sources of drinking water, and absorb pollutants generated by one of the busiest urban economies in Asia. In a city hemmed in by the sea and constrained by land scarcity, the park is not peripheral; it is central to survival. Without its canopy and catchments, Mumbai's vulnerability to flooding, heat islands, and air stagnation would multiply. Yet its very proximity to dense neighbourhoods exposes it to encroachments, infrastructure intrusions, and recurring human-wildlife tensions, particularly involving leopards navigating shrinking buffers.

Delhi's relationship with its forests is shaped less by water and more by climate. The Delhi Ridge, the northern extension of the ancient Aravalli range, functions as a climatic shield for a city prone to extremes. In summer, when temperatures soar past 45°C, the Ridge moderates heat and anchors dwindling groundwater. In winter, it acts as a barrier against desert dust blowing in from Rajasthan. But Delhi's challenge is not merely spatial encroachment; it is atmospheric assault. Pollution, invasive species, and fragmentation into disconnected ridge segments have weakened what was once a continuous ecological spine. In a capital where policy debates shape national priorities, the Ridge also carries symbolic significance—its degradation reflects not just urban stress but governance dilemmas.

Jaipur offers a different, more fragile equilibrium. Here, forests exist not as abundant lungs but as rare oases in a semi-arid landscape. Jhalana Leopard Safari Park, nestled within the Aravalli outcrops, is a remarkable example of coexistence where

wildlife thrives alongside a growing city. Unlike Mumbai's hydrological dependence or Delhi's climatic reliance, Jaipur's forests intersect deeply with its tourism identity. Visitors drawn to palaces and forts increasingly seek encounters with nature, making Jhalana both sanctuary and showcase. Yet this duality is delicate. Tourism pressure, water scarcity, and creeping urbanisation threaten to tip the balance, especially in an ecosystem already stressed by Rajasthan's aridity.

Seen together, these forests illuminate how geography and urban purpose shape ecological roles. Mumbai's forest absorbs the shocks of density; Delhi's forest tempers climatic extremes; Jaipur's forest anchors fragile terrain while enriching cultural tourism. But they also reveal a shared pattern of vulnerability. Urban expansion does not arrive dramatically—it advances incrementally, through small clearances, road widenings, informal settlements, and fragmented planning decisions. Over time, these cumulative pressures erode ecological resilience.

The problems confronting these urban forests are therefore not purely environmental; they are systemic. Legal boundaries often lag behind urban realities. Invasive species alter native biodiversity. Infrastructure corridors slice through habitats, isolating wildlife populations. And perhaps most critically, public imagination tends to view forests as leftover land rather than life-support systems. When green spaces are seen as expendable, conservation becomes an afterthought rather than a design principle.

Yet the future of such landscapes need not be bleak. Around the world, cities are rediscovering the value of urban forests as climate assets. The language of sustainability has begun to shift from mitigation to integration—recognising that

ecological systems must be embedded within urban planning, not appended to it. For Indian cities, this means moving beyond token tree-planting drives toward deeper ecological thinking.

The way forward lies in a blend of policy clarity and civic imagination. Stronger legal protection and precise ecological zoning can prevent incremental encroachment. Restoration of native species can revive biodiversity and resilience. Creating ecological corridors between fragmented green patches would allow wildlife movement and genetic diversity. Equally important is community stewardship—when citizens experience forests as shared heritage rather than restricted zones, conservation acquires social legitimacy. In cities like Jaipur, carefully regulated eco-tourism can fund protection while fostering awareness, provided carrying capacities are respected.

Ultimately, the story of India's urban forests is a story about choices. Cities will continue to grow; aspirations will expand; skylines will rise. But whether these futures remain habitable depends on how seriously we treat the thin green lines that sustain them. Forests within cities are not nostalgic relics of a pre-urban past. They are infrastructure of a subtler kind—absorbing carbon, storing water, calming temperatures, and offering psychological refuge in over-stimulated environments.

If Mumbai's trading towers, Delhi's corridors of power, and Jaipur's heritage boulevards are to endure, their green companions must endure with them. The test of a mature civilisation is not how tall its buildings rise, but how wisely it preserves the ecosystems that allow life beneath them to flourish. In that sense, the fate of these urban forests is inseparable from the fate of the cities themselves—and from the quality of urban life India hopes to build in the decades ahead.

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From Forest Commons to Urban Kitchens: The Hidden Inequality in India's Green Transition

Dr.H.S.Gupta

India's green transition is usually narrated through numbers: forest cover gained, saplings planted, carbon sinks expanded, highways landscaped, and compensatory afforestation targets achieved. Yet beneath these environmental metrics lies a quieter social question: who bears the livelihood cost of conservation and infrastructure-led growth, and who benefits from it?

Across India's forest-fringe regions — Jharkhand, Odisha, Chhattisgarh, parts of Maharashtra and central India — communities historically dependent on forests face increasing economic uncertainty. Mining, highways, protected area restrictions, plantation drives, and changing access to commons have altered traditional livelihoods built around grazing, fuelwood, seasonal cultivation, and minor forest produce.

The consequences rarely appear in environmental dashboards. They emerge instead in migration flows, informal settlements, and urban labour markets.

The domestic worker in a Delhi or Mumbai apartment is usually viewed only through the lens of urban informality. But many such workers originate from ecologically stressed rural districts where livelihoods linked to forests and commons have weakened over time. The connection may not always be direct, but it is significant enough to merit policy attention.

India cannot describe its transition as fully "green" if ecological gains coexist with persistent livelihood insecurity among forest-dependent communities.

The invisible labour pipeline

Domestic work remains one of India's largest informal employment sectors. It is overwhelmingly female, weakly regulated, and characterised by low bargaining power. Rural distress migration contributes substantially to this labour supply.

In several forested districts, women once depended on activities such as collection of tendu leaves, mahua flowers, sal seeds, lac, bamboo products, or seasonal forest-based income. When access to commons declines or local opportunities shrink, migration often becomes an economic necessity rather than a choice.

This is where environmental governance intersects with labour economics.

When commons weaken, labour becomes more vulnerable. When local rights remain insecure, migration intensifies. And when rural livelihoods collapse without adequate alternatives, urban India benefits from an expanding pool of underpaid informal workers.

The result is an uncomfortable paradox: environmental progress may coexist with deepening social asymmetry.

Green accounting without social accounting

India's forest and climate discourse often focuses on aggregate indicators — tree cover, plantation targets, compensatory afforestation, or carbon commitments. These indicators matter. But they do not fully capture distributional impacts.

A plantation may improve green cover statistics while replacing diverse community-use landscapes. A highway project may comply with environmental conditions while fragmenting grazing routes and disrupting local economies.

A protected area may strengthen conservation outcomes while restricting traditional livelihood access without adequate compensation.

The problem is not conservation itself. The problem is conservation without livelihood integration.

The Forest Rights Act (FRA), 2006 was intended to correct historical injustices by recognising the rights of forest-dwelling communities. Yet its perverted implementation has led to privatisation of Community forest resource rights, which neither anchor conservation nor rural livelihoods.

Similarly, large ecological restoration expenditures often prioritise physical outputs — hectares treated, saplings planted, fencing completed — while livelihood outcomes remain secondary.

India's green transition still lacks a robust social accounting framework.

The domestic wage as a development signal

Low domestic wages are generally discussed as a labour regulation issue. They are also a development indicator.

When migrant women from economically stressed forest districts enter urban domestic work at extremely low wages, it reflects a broader ecosystem of weak rural opportunity, insecure rights, limited local employment, and inadequate social protection.

Seen this way, the urban domestic wage partly reflects the hidden costs of uneven development.

Urban India benefits twice: first through extraction-driven economic growth linked to land, minerals, infrastructure, and energy; second through access to low-cost informal labour supplied by distressed rural regions.

Meanwhile, the same ecological transition that produces "green" metrics often fails to generate

stable livelihood systems for the communities closest to forests.

What should change?

India needs to integrate environmental policy with livelihood security far more systematically.

First, all major infrastructure, conservation, afforestation, and mining-linked interventions in forested regions should include livelihood impact assessments, particularly for women and forest-dependent households.

Second, revamp the Forest Rights Act, especially community forest resource rights must be linked to performance based ,duties -that can support both conservation and local economic resilience.

Third, ecological restoration funds should allocate a dedicated share toward livelihood generation — including NTFP value chains, community forestry enterprises, bamboo, lac, medicinal plants, agroforestry, and women-led green enterprises.

Fourth, domestic work requires stronger formalisation through enforceable minimum wages, social security inclusion, written contracts, and portability of welfare benefits.

Finally, India's climate and sustainability discourse must expand beyond physical indicators. Forest governance cannot be assessed only through satellite imagery or plantation counts. It must also be evaluated through livelihood stability, migration reduction, and dignity of labour.

A more honest green transition

The deeper issue is ethical as much as economic.

Forest-dependent communities are not merely beneficiaries of conservation policy; in many landscapes, they have historically been its custodians. If ecological transitions weaken their livelihoods while urban economies absorb them as vulnerable labour, then India risks reproducing

older patterns of extraction in a modern form.

Agreen economy that claims to protects forests but neglects forest people is incomplete.

India's sustainability debate must therefore move beyond counting trees toward recognising rights, livelihoods, and labour dignity together. The

domestic worker from Bastar, Santhal Parganas, Mayurbhanj, or Vidarbha is not separate from the story of environmental transition. She is part of it.

True sustainability lies not only in protecting nature, but also in ensuring that those closest to nature are not pushed into deeper economic insecurity in the process.

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Birthday Greetings

We wish the following born on the dates mentioned
"A VERY HAPPY BIRTH DAY"



S.No. Name of the Member	D.O.B.	S.No. Name of the Member	D.O.B.
Sarva Sri		S.No. Name of the Serving Officers D.O.B.	
1. Masood Ali Khan	06-06-1941	1. B. Venkateshwar Rao	08-06-1962
2. G. Rama Krishna Rao	06 06 1957	2. A. Chandrasekhar	10-06-1965
3. Munindra.	06-06-1960	3. M. Sreenivasa Rao	10-06-1964
4. V. Janakiram Naidu	08-06-1936	4. G. Srinivasulu	10-06-1968
5. M.A. Mabood Hazari	09-06-1955	5. Smt. G. Mangamma	10-06-1983
6. V. Devachary	09-06-1946	6. Mohan Chandra Pargaian	12-06-1964
7. N. Chandra Mohan Reddy.	10-06-1961	7. N. Rajendra Kumar	12-06-1969
8. T. Hanmanth Reddy	10-06-1943	8. V. Satish Kumar	13-06-1968
9. K. Rameshwar	14-06-1936	9. G.P. Anand	13-06-1968
10. D. Sudhakar	14-06-1954	10. S. Madhava Rao	16-06-1968
11. M.V.S. Prakash Rao	15-06-1944	11. N.V. Sivaram Prasad	18-06-1966
12. Dr. N.R.K. Rao	15-06-1943	12. P.V. Chalapathi Rao	19-06-1968
13. Qudrath Mohiuddin Ahmed	15-06-1955	13. M. Raja Ramana Reddy	19-06-1968
14. P. Ashok Kumar	18-06-1953	14. M.V. Prasada Rao	20-06-1967
15. Dr. Mohd. Iliyas Rizvi.	19-06-1961	15. Smt. T. Nagamaneswari	22-06-1974
16. M. Janakiram	19-06-1964	16. Dr. C. Suvama	24-06-1966
17. J.V. Sharma	20-06-1932	17. Smt. B. Praveena	25-06-1980
18. Dr. A. Kishan	20-06-1955	18. S. Saravanan	26-06-1973
19. C. Venugopal Rao.	20-06-1960	19. K. Mohan	26-06-1964
20. S. Nauratan Singh	22-06-1942	20. Sm.Ch. Balamani	26-06-1974
21. Joshi Gopal Rao	22-06-1963	21. Smt. P. Srilakshmi	27-06-1981
22. P.J. Benarji	24-06-1958	22. G. Laxman	28-06-1963
23. D. Ramnarayan	25-06-1950	23. Y. Sanyasi Naidu	01-07-1962
24. N. Linganna	01-07-1941	24. G. Dharma Raju	01-07-1963
25. M. Bullaiah	01-07-1952	25. P. Sivashankar Reddy	01-07-1963
26. Sitaram Gupta	01-07-1952	26. P. Samuel	01-07-1964
27. Badusha Saheb	01-07-1953	27. K. Somasekaram	01-07-1964
28. K. Govinda Rao	01-07-1953	28. Ashok Kumar Sinha	01-07-1965
29. P. Eshwar Reddy	01-07-1953	29. B.V.A. Krishna Murthy	01-07-1967
30. Dr. E. Narasimhulu	01-07-1954	30. R. Srinivas	01-07-1986
31. Dr. K.P. Srivasuki	01-07-1956	31. Sandeep Krupakar Gundala	01-07-1987
32. P.V. Ramana Reddy	01-07-1957	32. R. Srinivasa Reddy	05-07-1971
33. S. Mustafa.	01-07-1960		
34. A. Srinivasa Rao.	01-07-1960		
35. T. Narasimhulu.	01-07-1959		

- SECRETARY

Any Omissions and Commissions in the Names / Dates may kindly be informed to the Editor over WhatsApp or Email.



Highway Farm Forestry: India's Roads as Drivers of Rural Livelihoods, Ecological Health, and Wood Security

R. K. Sapra*, Vinod Kumar** Vinod Mathur***

1. The Problem and the Proposed Solution

India's national highway network reached 1,46,195 km in 2024, a 60 per cent increase over 2014 (MoRTH, 2024), with Vision 2047 targeting 50,000 km of access-controlled expressways as part of the Viksit Bharat@2047 infrastructure mission. Logistics costs have declined to 7.97 per cent of GDP (DPIIT-NCAER, 2025), validating continued investment. The ecological cost, however, is unaddressed: vehicular VOCs and NO_x interact in sunlight to form surface ozone, damaging crops and causing respiratory disease, while heavy metals from brake wear and exhaust accumulate in roadside soils and food crops. Land acquisition costs make formal government green belts impractical at this scale.

Highway Farm Forestry (HFF) is the answer: a voluntary and commercial agroforestry model in which landowners near national highways cultivate pure tree crops on private agricultural land, motivated by returns that exceed the opportunity cost of current land use. Since tree crops are grown for industrial wood and not consumed by humans in pollutant-exposed zones,

they eliminate the dietary health risk inherent in growing food crops on contaminated soils. HFF is implemented within the Tree Crop Buffer Zones (TCBZ) spatial framework (Mathur and Sapra, 2023): TCBZs define where to plant; HFF defines how, through farmers, markets, and institutions. This profitability-first foundation also distinguishes HFF from the social forestry programmes of the 1980s-90s, which failed by imposing species and systems without market linkage. As the Green Revolution secured national food security, an Agroforestry–Wood Industry approach can secure income stability for farmers while strengthening ecological sustainability along India's expanding highway network.

2. Highway Farm Forestry Zone Framework (0–500 m)

HFF is implemented within a simple 0–500 m corridor on both sides of national highways, covering private farmland within this band. The band is divided into three practical zones reflecting pollution gradient and implementation ease. Farmer choice and food production are fully protected in the outer zone:

Zone	Depth	Land Context	Approach
Zone 1	0–100 m	Highly polluted; food crops inadvisable	Priority tree crops. Mission-funded incentives for private land; NHAI berm land used where available.
Zone 2	100–300 m	Moderately affected; food crops at risk	Voluntary HFF with Mission incentives and guaranteed industry buyback. Mixed agroforestry; partial food crops permitted.

Zone 3	300–500 m	Marginal risk; productive farmland	Voluntary adoption encouraged. Farmer choice fully respected. Mission advisory and extension support available.
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Zone boundaries are indicative and should be refined through site-specific environmental

3. Species Selection: Marketability First

Every recommended species must have a demonstrated, accessible market in its region of planting. For northern and central India: poplar (*Populus deltoides*), Malabar neem (*Melia dubia*), gamhar (*Gmelina arborea*), shisham (*Dalbergia sissoo*), *Ailanthus excelsa*, and eucalyptus clonal varieties where site-specific assessment confirms no adverse groundwater impact. For peninsular India: teak (*Tectona grandis*), silver oak (*Grevillea robusta*), and casuarina (*Casuarina equisetifolia*). Bamboo clones (*Bambusa balcooa*, *Dendrocalamus strictus*) suit multiple regions. MoEFCC should deregulate at least six commercially important species — *Populus deltoides*, *Eucalyptus hybrid*, *Melia dubia*, *Ailanthus excelsa*, *Casuarina equisetifolia*, and subabul (*Leucaena leucocephala*) — following the bamboo deregulation model under the Indian Forest (Amendment) Act, 2017, to facilitate free transit and felling on private land. ITC Bhadrachalam, ICFRE-improved clones of high-yielding varieties, etc., should be used; current TOF average productivity of approximately 3.0 m³/ha/yr (Down to Earth, 2017) can rise to 10–15 m³/ha/yr under scientifically managed agroforestry with improved clonal material (CIFOR-ICRAF, 2021). Large industry players such as ITC Bhadrachalam, with strong commercial interest in the standing crop, should be enrolled as programme partners to co-deliver extension, quality nursery supply, and guaranteed buyback.

4. Economic Case, Viksit Bharat@2047, and Carbon

India's TOF currently yields approximately 125 million m³ of roundwood equivalent annually



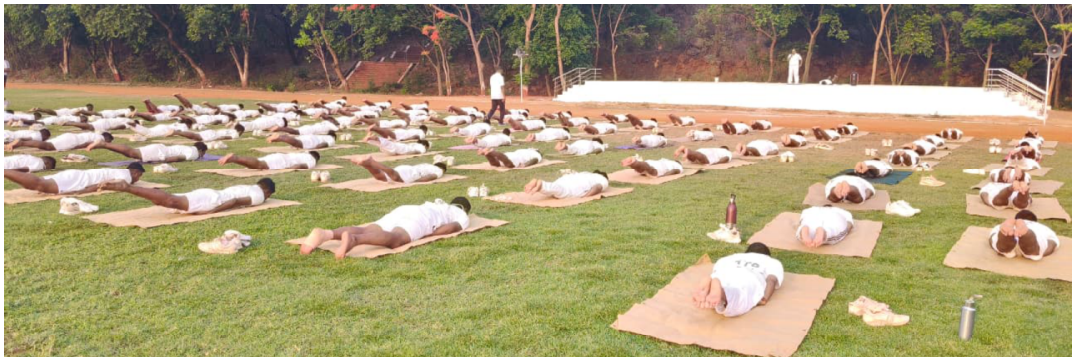
against approximately 3 million m³ from natural forests (ICFRE, 2025). Against a domestic industrial demand of approximately 180 million m³, India imports approximately 55 million m³ annually (ICFRE, 2025). HFF narrows this gap by generating additional industrial wood along highway corridors, strengthening Make in India manufacturing in plywood, furniture, and paper, and contributing an estimated 3 per cent increase in India's TOF cover by 2047. This directly advances Viksit Bharat@2047's "Aatmanirbharta" (self-reliance) goal by reducing import dependency, and its "Annadata" objective of increasing farmer income, since supplementary timber income over 5–7 year rotation cycles add a stable revenue stream for rural households.

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TGFDC Celebrates International Biodiversity Day 2026 Mass Seed ball Making & Distribution @ Botanical Garden, Kondapur



TGFA-Weapon training at police academy, Yoga classes for beat officers



Drone training at FCRI, Mulugu



పర్యావరణహితం
సింగరేణి అభిమతం



డోర్ల ఓసీ డంపుపై పెరిగిన ఫ్లాంటేషన్



బ్లాక్ ఫ్లాంటేషన్



సింగరేణి ఆధ్వర్యంలో నిర్మించిన చెరువులు



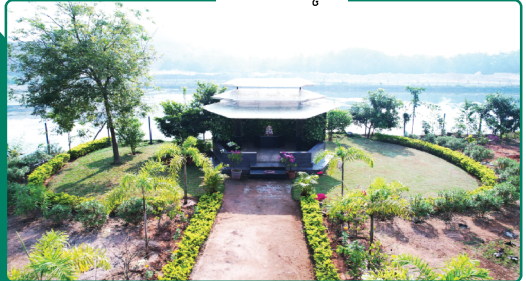
అవెన్యూ ఫ్లాంటేషన్



ఎకో పార్కులు



సింగరేణి
 కాలరీస్ కంపెనీ లిమిటెడ్
 (ప్రభుత్వ రంగ సంస్థ)



Continuation from page No. 28

Existing agroforestry in India offsets approximately 109 million tonnes of CO₂ annually, equivalent to 33 per cent of total greenhouse gas emissions from the agriculture sector (Nath et al., 2016). HFF plantations along highways will augment this sequestration, contributing measurably to India's NDC carbon sink commitments under the Paris Agreement. TCBZs can simultaneously qualify as Other Effective Area-based Conservation Measures (OECMs) under Target 3 of the Kunming-Montreal Global Biodiversity Framework

(2022), supporting India's 30 by 30 target through wildlife corridors and pollinator habitat. Panchayat-level Biodiversity Management Committees (BMCs) under the Biological Diversity Act, 2002, provide a ready governance channel for OECM designation. Carbon credits, registered under India's Carbon Credit Trading Scheme (Energy Conservation Amendment Act, 2022), should be pooled into the Highway Green Belt Fund; net returns to participating farmers from voluntary carbon markets are estimated at USD 10–20 per tonne CO₂ equivalent (CIFOR-ICRAF, 2021).

Illustrative impact projections for 1 crore ha (10 million ha) adoption by 2047 — consistent with a ~3% increase in India's TOF cover:

Parameter	Indicative Estimate
Wood production	10–15 m ³ /ha/yr; 500–750 million m ³ over a 5–7 year rotation (1 crore ha by 2047)
Farmer income	Rs. 1.5–3 lakh/ha over 5–7 year rotation (species and market dependent)
Rural employment	200–250 person-days/ha; ~2,000–2,500 million person-days cumulatively
Carbon sequestration	~5 t CO ₂ eq/ha/yr (Indo-Gangetic plains); eligible for Carbon Credit Trading Scheme
Import substitution	Meaningful reduction in 55 million m ³ annual wood import gap (ICFRE, 2025)
Tree cover gain	~3% increase in India's Trees Outside Forest cover
Programme funding est.	Rs. 5,000–10,000 crore over 10 years via NHAI Green Cess, carbon credits, corporate ESG, and central/state budget

Carbon credits require third-party MRV verification.

5. Implementation, Institutions, and Financing

HFF requires voluntary behaviour change across millions of landowners and cannot be delivered by administrative order. Five conditions are non-negotiable. First, incentives must make tree cultivation demonstrably more profitable than existing land use, calibrated state-by-state; initial uptake is unlikely to exceed ten per cent of eligible farmers and financial planning must reflect this conservative baseline. Second, the programme should be phased, with early rollout in states with established farm forestry culture and active wood industries, such as Uttar Pradesh, Punjab, Haryana, Gujarat, Madhya Pradesh, and Andhra Pradesh. Third, SFD extension machinery requires significant strengthening: beat and range staff need training, quality nursery access, and incentives tied to farmer adoption, not area targets. Forestry advisory services should be mainstreamed through Krishi Vigyan Kendras and digital platforms. Fourth, wood-based processors must be enrolled through MoUs specifying buyback volumes at market prices; the Yamuna Nagar cluster — comprising approximately 300 plywood units, 356 peeling units, and 40 sawmills with annual turnover of Rs. 6,000–8,000 crore (PLY Insight, 2019) — demonstrates the scale achievable when farm supply and industrial processing are integrated. Fifth, the National Transit Pass System (NTPS), launched pan-India on 29 December 2023 as a ‘One Nation-One Pass’ digital regime, eliminates state-specific permit barriers for timber transport; universal NTPS adoption must be a prerequisite for central programme funding.

The Ministry of Agriculture and Farmers Welfare (MoAFW) should establish a National Agroforestry Mission with an explicit highway corridor mandate, building upon the National Agroforestry Policy

2014. A National Agroforestry Development Board under MoAFW should coordinate across ministries of agriculture, forestry, rural development, environment, and industry. The ‘Har Med Par Ped’ initiative for boundary plantations provides an additional channel for farmer mobilisation along road corridors. The failures of 1980s social forestry — rooted in inappropriate species, absent markets, and weak farmer ownership — are avoidable if the Mission mandates improved planting material, pre-established buyback, and farmer-first extension as hard design requirements, not aspirations. A ring-fenced National Agroforestry Mission Fund, primarily financed by central and state budgetary allocations, should be constituted. Additional sources include corporate ESG co-financing; and NHAI contribution under the Polluter Pays Principle (Environment Protection Act, 1986) at a later stage once the concept is demonstrated and NHAI is convinced of its value. Women-led self-help groups should be primary planting beneficiaries, consistent with the Viksit Bharat@2047 Mahila pillar; tribal farmers under the Forest Rights Act, 2006, must not be excluded on documentation grounds.

6. Conclusion

HFF is a genuine win-win aligned with Viksit Bharat@2047: it increases farmer income (Kisan pillar), generates rural employment (Yuva and Garib pillars), reduces the 55 million m³ annual wood import gap toward “Aatmanirbharta”, contributes carbon sinks toward India’s NDC commitments, advances the 30 by 30 biodiversity target, and protects highway communities from vehicular pollution. No other single land use intervention delivers this convergence across such a large and expanding geography. The policy instruments are in place: Bharatmala for the

highway build-out, NTPS for timber movement, the National Agroforestry Policy for the institutional framework, and the Biological Diversity Act for OECM governance. What is required is the resolve to establish the National Agroforestry Mission with adequate funding, implement it through State Forest Departments, design the programme with commercial realism, enforce industry buyback, strengthen extension, and resist substituting area targets for genuine farmer adoption. NHAI's participation as a co-funder, while desirable, should not be a precondition for launch. As the Green Revolution transformed India's food security, an Agroforestry–Wood Industry revolution along India's 1,46,195 km highway network can transform rural income security and ecological sustainability by 2047. Every kilometre built without an ecological complement is a cost deferred, not avoided.

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COMPOUNDING OF FOREST OFFENCES

Dr.Akula Kishan

Introduction

Compounding, also known as Composition of an offence is a procedure by which the Government gives a person who is reasonably suspected of committing an offence under that law (the alleged offender) the chance to avoid prosecution and conviction in court by paying a sum of money to the Government. On payment of the sum of money by the alleged offender, the Government will not take or will discontinue any criminal proceedings against the alleged offender in respect of the offence and the alleged offender is taken not to have been convicted of the offence.

Forest Law

Section 59 of the State Forest Act 1967 of Andhra Pradesh and Telangana and Section 68 of Indian Forest Act, 1927 provides for the Composition of Forest Offences.

The general procedure followed is on expression of willingness by the offender, the competent officer may accept or reject the offer, and in case the composition is agreed to, the quantum of amount to be collected is as mentioned in the said Sections.

The general view held by many forest officers is that Compounding order is issued by the competent officer, on request for the same by the alleged offender. The expression in Section 59 reads as, "Any forest officer, specially empowered in this behalf by the Government **may accept a compensation** from any person ...". Section 68 of Indian Forest Act, 1927 reads as, "The State Government may, by notification in the Official Gazette empower a **Forest Officer to accept** from any person.." Thus the Forest Officer can

accept the composition amount and the Forest Officer cannot **impose** the Compounding amount.

Illustration - In a recent case in High Court of Andhra Pradesh (**Gurram Srinivasulu vs State of Andhra of Andhra Pradesh and others (W.P.no.9197 of 2017= APHC 010119972017)**) the distinction was considered. The facts of the case are that the Vigilance & Enforcement Department of Government of Andhra Pradesh inspected a Saw Mill and Timber Depot at Anantapur on 30.10.2015 and 31.10.2015, and on verification of Timber accounts, came to the conclusion that there is variation in stocks and called for explanation from the Saw Mill owner. The Saw Mill owner offered his explanation which was not accepted, a notice was served on 19.03.2016 to pay a penalty of Rs.25,51,450/- As the amount may not be collected without an offence case, Offence in O.R.No.77/2015-16 was registered by FRO Anantapur, and the notice amount of Rs.25,51,450/- was to be paid as compounding fee.

The Saw Mill Owner pleaded that the Vigilance & Enforcement Department officials are not authorised to inspect and register cases, whereas they are empowered to do so under Transit Rules. The variation of stocks is in accounts, and the case could be for improper maintenance of accounts, for which the imposition of penalty under Rule 9(2) of AP Saw Mill Rules 1969, is only to the extent of security deposit available. The explanation was not replied or acted upon by the DFO Anantapur. As no action was taken, an appeal was submitted to the Conservator of Forests, Anantapur, and later the Writ Petition is filed. The action of the authorities is against the observations of Supreme

Court of India in ***Mardia Chemicals v Union of India*** {(2004) 4 SCC 311}, wherein it was held that once a notice is issued and an explanation is submitted, the concerned authority is expected to pass an order, even if no appeal is provided under the statute.

The Hon'ble High Court of Andhra Pradesh, in their Order dated 02.03.2026, was pleased to allow the Writ Petition and passed the following directions:

a) The impugned penalty notices dated 19.03.2016 and 30.08.2016 were held to be illegal to the extent of the amounts specified therein, as the penalty was wrongly calculated using the compounding formula under Section 59(1)(ii) of the A.P. Forest Act, 1967 instead of the correct penalty provisions.

b) The Hon'ble Court held that since the authorities had proceeded only to impose penalty (without revoking the license or seizing properties under Rules 9(1) and 9(2)(a) of the A.P. Saw Mill (Regulation) Rules, 1969), the penalty is squarely governed by Rule 9(2)(b) of the A.P. Saw Mills (Regulation) Rules, 1969, and the amount of penalty cannot exceed the limit of the available security deposit.

c) Accordingly, the Hon'ble Court modified the penalty amount in the notices dated 19.03.2016 and 30.08.2016 by limiting the penalty to the amount in the security deposit, which shall be adjusted against such payment.

Thus the penalty of Rs.25,51,450/- is modified to the tune of about Rs. 5,000/-. The correct application of legal provisions was not done.

The penalty/composition was attempted to be levied based on non-existing forest produce and only based on entries in timber accounts, and the offence case is also registered for non-existing forest produce/timber.

Thus, the imposition of exorbitant penalty/compounding fee of Rs.25 lakhs is bad in law, and in fact such an action may be treated as wrongful use of powers by concerned authority and they could be held liable for penal action under Section 55 of A.P./TS Forest Act, 1967.

In Confiscation proceedings

It is pertinent to mention that in confiscation proceedings initiated by a Forest Officer, acting as Authorised officer, the opportunity to compound the offence is to be provided to the alleged offender as observed by the High Court of Andhra Pradesh in the case of ***Divisional Forest Officer, Adilabad Vs Laxman Pratap Ray Alias Lakshman*** {1991 FLT 229(AP)= 1991 (1) ALT304}. It was observed that, 'it is therefore clear that it is for the forest officer concerned to put the accused or the offender on notice regarding the provision for compounding. This obligation arises particularly because of the fact that once this stage is crossed and the authorised officer takes up the case for purposes of the confiscation proceedings, there is no question, as we shall presently show, of compounding the offence at that stage.' There is no provision for the Authorized Officer or the Magistrate, as the case may to compound the offence, after the stage of processing done by Competent Forest Officer on compounding. And the Divisional Forest Officer has to give an option to the offender to compound the offence, before he takes up proceedings as Authorized Officer. The willingness to compound may be accepted or rejected, by providing sufficient reasons, and start functioning as Authorized officer.

Amendment Act of 2016 and continuance of Section 59

The Andhra Pradesh Forest Act 1967 was amended in the year 2016 wherein the forest offences are made cognizable and non-bailable, and the punishments for Red Sanders,

Sandalwood and Scheduled Tree are enhanced to ten years and fine of up to ten lakh rupees. The provisions of Narcotics Act (NDPS Act, 1985) are included from Section 60A to 60 U. And in such situation, the continuance of un-amended Section 59 may help the offender to get scot free by getting the offence compounded. The necessary amendment to Section 59 is to be considered, to avoid any such misuse.

In Criminal Law

Section 359 of BNSS provides for compounding offence in two categories:

The first category is composition to be done by the offender and the specific person who can accept such composition, and 37 such offences are listed under Section 359(1).

In the second category under Section 359(2) the composition is to be done with the permission of the Court before which the prosecution for such offence is pending, and person who can compound the offence is specified, in 13 cases.

And as per Section 359(9) no offences except those mentioned in Section 359 can be compounded.

Thus there is not much discretion for composition of offences.

The High Court of Andhra Pradesh in the case of

Annamdevula Srinivasa Rao vs State of Andhra Pradesh { 1995 crl.L.J.3964 = 1995(2)Alt(Cri) 447} held that High Court has no power and jurisdiction to direct the subordinate criminal courts to permit the parties to compound the offences which are otherwise non-compoundable in exercise of the inherent jurisdiction under Section 482 of the Code of Criminal Procedure.

Conclusion

The discretion of the officer concerned is seen under Section 59 of the AP/TG Forest Act in that, the willingness to compound by the offender may be accepted or rejected by the Competent Forest Officer. And the quantum of composition amount varies based on the value of Forest Produce involved and ranges from one value to five times the value of forest produce. Such discretion is to be properly utilised and the suitable guidelines or amendment to offence rules may be thought of, to minimize harassment of public and reduce chances of corruption.

It is desirable that when Law enforcement is to be done, it is imperative that the concerned Forest Officer understands the nuances of law and applies the same, as otherwise the Forest Department would be put to embarrassing situation as was done in the Anantapur case cited supra.

The author is a retired IFS officer/CF, Telangana cadre. He authored many books on Forest Act and Allied Acts, the Forest Code and drafted various amendments. He is a practicing advocate in APTG High Courts. M-70930 06261.

The Sole Motive

In all that you do, let love be the sole motive. Let action be out of Love. If Love becomes the grounding principle of all deeds, then most of the ills of the world will vanish

-Chandrasekharendra Saraswati



Heavy Smuggling in Forests (Happens With Connivance & Transit Pass)

B M T Rajeev

The forests are protected with care by the dedicated and committed forest force as prescribed by the law in force. Still forests are depleted by illicit felling of trees, smuggling of timber, firewood and NTFPs- the precious forest produce from the Reserve/ District/Protected Forests. Whenever smuggling takes place on a large scale, will come to the notice of the senior officers through petitions or public outcries then only investigations take place.... The investigations are mostly conducted by the Forest Officers namely Range Forest officers (RFO) limit to Range, Asst, conservator of Forests (ACFs) and very rarely Deputy Conservator of Forests (DCFs), in rare cases Conservator of Forests (CF) or by Forest Mobile Squads (FMS).

The investigations are done in the Forest Department as empowered by the law within the framework of rules and procedures; to file charge sheets in the court of law for the on hand offences or to assess the quantum of smuggled forest produces lost, mostly on complaints/ allegations against the guardians of the Forests and they will



Pic: A timber loaded lorry in transit

end up in mid air without tracing the smuggled forest produces targeting the Beat/ Section/ Range/Sub-Division/ Division-forest officers concerned to punish with disciplinary proceedings for the lapses in their duties which

generally end up with warning/punishing the delinquent forest officer/s rather than tracing the culprit & recovering the Forest Produces or cost of the produce lost/ damage caused to forests.

I wish to analyze the lacunae in the investigations concerned to large scale smugglings of timber/ firewood/NTFP taken place in the reserve forests (RFs) or forests in government lands (DFs) with reference to the following cases that I have come across in my service of 37 years with analysis based on my experience in the field and show that how the cases were ended up in the mid air without recovering the lost forest produces smuggled causing loss to the ecology/government etc...

1. A Case of Illicit Felling in the DF in the guise of Malki Pass: (Transit passes issued for the timber & fire wood of the private lands)

I was RFO in the Sorab, a taluka Hqs , Sagar Dvn of Shivamogga Dist during 1981-84. Within a month of my postings in April, 1981, an inland letter came to my address by name carrying an information about the scandalous felling of trees deep inside a vast forest area-DF and conversion of the same in to fire wood billets, debarking and transporting to Harihar Polyfibres in Davanagere Dist as raw material to Ryon factory through the transit permits granted for the malki in a private land in the Chandragutti Section of Sorab Range. It also contained a route map to raid personally and not to inform the staff as they are alleged to have been connived in it.

I was new to Sorab Range. An ACF who worked as a colleague to me in a neighbouring Range in

the Tumkur Dn in 1976, was I/C DCF-Sagar Dvn after the transfer of the DCF-S. I spoke to him over phone about the allegation/letter received. He informed me that he will send the Departmental lorry by next day morning and asked me to collect some good staff and raid immediately.

The staff was called to the office without giving any clue and on the arrival of the lorry; we went to the spot through the route given in the letter. It drove us to a very interior area into a District forest, where hundreds of labourers were engaged in work by a contractor as alleged in the petition; they were working as if in the forest coupe. Section Forester-a trained but lazy guy who was issuing permits sitting at his home became dumb by seeing the spot and labourers working on preparation of the firewood with debarking. We cordoned the labourers, stopped the work, seized all the implements, fuel wood and drew the spot mahazar (Pancha nama). The labourers protested against their arrest by projecting as they were coolies from Dharwad-neighbouring district and gave the details of the timber merchant who had employed them etc... To avoid quarreling with women labourers who were more in number, we picked up four head mazdoors and left for Hqs and produced them to the court with FIR and a complaint.

The entire property-FW seized was taken over and confiscated to the govt as perishable material by keeping samples. The accused timber merchant who was a big shot and a popular land lord in the taluk was charge-sheeted in the case. He was put to shame as his permits were withheld pending disposal of the case; which forced him and other crooks in such trade to leave the timber business in the Sorab Range.

The Forester was pardoned from punishment as it was the very first case which came to light before

me and I gave him a chance for improvement with caution to all the staff in the Range to strict adherence to the rules.

N.B: Issues to be taken into consideration for investigation...

1. This case indicates the lack of application of integrity in the process of scrutinizing the mafi pass files by the officers-my predecessor. The number of trees marked and their yield estimation and the trees felled and their yield in the field within the certified sketch checked diligently with care about mischief in the neighborhood forest lands and approval for issue of passes limiting to the exact number of permits required to be issued with time limit. There should be a tally between the yields estimated – yield obtained – permits to be issued. None of the above parameters were applied in this case which gave rise for the scandal of this magnitude by the contractor with the connivance of the field officer-Section Forester and his staff by issuing more permits.(This meticulous calculations and norms were started and implemented by the next new DCF).

2. The lapses in the investigation were:

a.The I.O-RFO should have seized the mafi-pass records, inspected its spot and verified the stock of timber, fire wood remaining in the spot, the yield estimated and yield approved for issue of passes& permit issue.

b.The transit permits issued so far and the quantity of timber, FW and its tally with the material in the field would show the excess produce lifted from the DF.

c. Enumeration of the stumps in DF and estimation of the yield minus-property seized and balance will show the produce smuggled quantity of FW...here there is no chance for timber to lift from DF as it requires PT stamp by the RFO-PT in the DCF

office.

d. Confiscation of the FW of the Pass holder found in the field equal to the property smuggled and so on to black list the contractor and prosecute.

But, I.O. remained happy for having booked the case of FW smuggling out of the DF and filed a charge sheet against the Contractor... and he was not aware of the procedure and none of the officers or DCF office guided him ...which was not sufficient with visualization now, based on my experiences in service. It comes only from experience either by listening from seniors or reading the memoirs -books of the experiences of retired Foresters to be smart in the field of investigation. It appears to be a case where the outturn in the mafi pass case was shown more than actual to get transit passes for FW prepared in the DF.

Findings: This is a case to prove that no forest produce from the forests can be smuggled or come on movement on roads to the market without transit permits issued by the Foresters' connivance.

II. Fraudulent Issue of Form no.28 Permits without Felling Trees.

I was ACF in 1984-87 in the Forest Mobile Squad, Mysore circle. We received a complaint forwarded by the CF, Mysuru-about misuse of transit permits granted under bonafide timber-teak in Saragur Range, Mysore in March, 1986. I took up the case for investigation.

We asked for the details of permits issued with connected records in the Saragur Range. The RFO did not reply. We visited the Saragur Range office and collected all connected records. On visit to half a dozen spots concerned to files... we found a surprise – that the teak trees marked and numbered are physically standing on the private lands but, **form no-28 permits have been**

issued for 2.80 cmtr of teak logs of different measurements for all the cases @ 2 permits per case-a true case of cheating the profession.

Then we decided to verify all the permits – of form no-28 issued and found that no trees have been felled in private lands for the malki transit passes but permits issued. We searched most of the forests in Saragur Range and found no illicit felling in it. On questioning the RFO did not give a clue or satisfactory answer for the source of the timber for issue of the permit blindly.

A case of misuse/sale of power and issue of form no-28 for teak wood transportation without felling of trees in private lands was made out and a report submitted to the CF-Mysore to take action against the RFO was dealt as per CCA Rules and suspended. The FMS was happy for having exposed fraud by a crook FRO.

***Truth of this case was different:**

It was a well planned & calculated fraud to cheat the govt. The case does not stop with finding fault with the RFO who built up the record in the name of farmers for felling and use of teak trees for house construction-self-bonafide use under KPTA, 1976. He had issued permit for timber from some forest area as it proved to be not from the farm lands; it amounts to smuggling of govt timber forest elsewhere in the name of permit of bonafide transit pass.

The Investigation should have continued to trace the stumps and timber smuggled from the forests in the vicinity as the Saragur Range was adjoining to teak timber rich forests of Bandipur Tiger Reserve.

****It should have been investigated on the following parameters in addition to the above investigations...***

a. The timber permits issued to where.....

should have been followed and the property seized either in sawmills or in the final destination as it is possible on record-permits issued.

b. The saw mills which received timber with permits should have been hauled up and the men behind the fraud should have been unearthed.

c. The houses of the applicants should have been searched and the truth about issue of formno.28 should have been investigated.

d. Transit pass for 2.80 m3 timber is a ¼ lorry load but 2 permits issued for lorry loads all at 18.00 hours evening for transportation is a calculated scandal- a full lorry load of timber can load up to 25-30 m3; here the original & O.C. permits appeared have been manipulated to smuggle huge quantity of timber from the forest).

d. Issue of permits without felling trees in Pvt lands...amounts to issue of permit to govt timber somewhere in the forests. The cases of this nature should be dealt as a cheating to the govt under Sec 420 of the IPC and proceeded to recover the cost of property since the property let out is known as recorded in the permits or a criminal case should have been lodged with the police for the value of the timber-teak as per the permits as it is a fraud and RFO should have been charged to make good of the loss to the govt.

e. But none of the above efforts were made with the joy of accomplishment of the job in finding fault with the RFO in issuing permits without felling of trees in the farm lands as alleged in the petition and investigation closed.....

It was due to lack of knowledge/experience then in the investigation to I.O. (to me) to reach the core

of the scandal then. Because, neither I.O. nor his staff had the experience then to think on the above points or I.O. was guided by the office of the CF to do so.....

These are the issues that come handy when we read memoirs or hear from the seniors of their experiences-a point to be noted by the Forest Department.

***The Skeletons Surfaced:**

I was posted as ACF & Research Officer to Bandipur TR in 1992, the said RFO-Saragur was in the Moolehole Range, Bandipur TR, Because of my writing habits the Field Director entrusted me to write the 20 years Review Report of BTR for the 20 years Project Tiger celebration in 1993. I came across a file in F D office – AGs objection about the then Deputy Director's enumeration list of about 500 teak stumps made out around in 1988-89 or so in Havarepura thota of the Bandipur TR in Hediya Range-adjoining to the Saragur Range and the blame was on the sitting RFO – Kalappa (A known sincere RFO).

My memory went back to visualize the crime and remember the name of the RFO then in Hediya Range, Bandipur TR, a known guy with suspicious character–when the adjoining RFO, Saragur issued permits in the name of pvt lands (without felling trees) for the teak in 1986 and the stumps of the Havarepura thota of the BTR as an adjoining forest area to Saragur Range to draw my conclusion as a case of joint operation of smuggling done by two fraudulent RFOs.... if a clue were to lead me to BTR – in 1986; the case would have been a different case then. I decided not to raise the buried case of 1986 in 1992 – when the Bandipur TR was in jubilant mood for the 20 yrs celebration of Project Tiger in Feb, 1993.

III. NTFPs caught with the Vehicles-released

based on Transit Permit Issued where no forests with NTFP

In the process of preparation of the 20 Years PT Report, I had to attend the FD, Office, Mysore to cull out the information, to write and also to get it typed..... on a day I decided to return to Hediya, my headquarters during the night in Nov, 1992. While returning I stopped a vehicle-van from Hediya side in the mid night and checked it and found gooseberry load with the permit in Form no.27 issued by the ACF, Gundlupet Territorial Sub-Dvn. In fact there was no goose berry bearing RFs after inclusion of its forests under Bandipur TR in 1982 and he had no forest towards Hediya too. I seized the vehicle, taken it to the office compound and slept.

By 2.00 am -my colleague from Gundlupet who had issued the permit appeared. I welcomed him and asked him if there are any issues? He pleaded for release of the gooseberry seized with the van. I asked why? It is not your business, let the lorry fellow come & explain from where he has collected the gooseberry as you have no forests bearing gooseberry fruits-trees and you have no forests towards Hediya for him to come on this route?..... He pestered...I told him that it is not wise to issue permits for the products from Bandipur TR-the very source of food for ungulates... it will not be released; the matter will be investigated to the end. He left with a swollen face...

To my surprise, the said ACF got it released from his friendly DCF, Bandipur TR after submission of my report with the projection that the produce had a valid transit permit-what a joke!

*Another lorry was booked close to Bandipur TR boundary with NTFPS with permit-Form.No-27 issued by the said territorial wing-ACF-Gundlupet where there was no forests bearing NTFPs... but all from the Bandipur TR for sure... the DCF,

Bandipur TR released this vehicle too without verification of the spots and to the surprise of me and the staff by throwing cold water on the efforts on our efforts in seizing the vehicles in the border of Bandipur TR during night; an act against the interest of protection of the NTFPs/ the very food source of the ungulates in the Tiger Reserve-a case of connivance.

IV: Heard From a Retired IFS Officer:

He was ACF as a probationer posted to the HD Kote Range in 1989, Mysore for a year. On perambulation in his Range after taking charge, he found a lot of teak trees felled mostly fresh but no stamp affixed to stumps which indicated that trees were smuggled. He feared about its smuggling...and enumerated all teak stumps-nearly 1750 stumps- on the suggestion of a senior Forest Officer close to him and reported to the DCF, Mysore and he too inspected the spot and ...no further investigation took place and the Probationer was safe and case was buried.

NB: In this case the I.O. should have ordered for verification of all the Malki-Mafi pass permits issued in the Antharasanthe, Saraguru and HD Kote Ranges of his division in the last one year and the spots of mafi or bonafide teak permits of private lands issued and stumps in the field and produce with the bonafide permit holders...and also audit of permits issued to sawmills with reference to the permits of logs converted... to find out the timber lost from his forests. But not done & no case made out. This sort of large scale timber cannot go out without connivance/transit passes.

V: Large Scale timber smuggling in Bandipur TR in 1997:

Timber smuggling of teak in the Maddur Range of Bandipur TR surfaced in 1997, the RFO and his

staff were suspended and a press reporter who went to investigate the illicitly felled teak trees was later murdered and so on, which was estimated to be a huge loss to the government. But, no property was seized and confiscated to the government except punishment to the delinquent staff and the RFO.

NB: Here too, the I.O or FMS should have seized all the malki/Mafi pass permit files in the Gundlupet Territorial Range/ ACF office and investigated the teak trees felled, stumps, permits issued and produce with the bonafide permit holders and the exchange permits issued in the sawmills in Gundlupet and Nanjangudu or nearby sawmills would have pinned the culprits who have issued transit permits for the smuggled timber. No teak trees can be smuggled without transit passes.

Suggestions to check the timber smugglings:

i. The above analysis of large scale smugglings in forests point out that whenever smuggling of timber or fuel wood/NTFPs takes place with heavy illicit felling in the forests or in the PAs... the Investigating Officers (I.Os) should look in to the transit permits form no.-28 s issued by the RFOs in the adjoining Ranges or Sub-Dvns during that time with cross reference to the DCFs office as they are the authority to grant of such from no.28 transit permits.

ii. No property can be smuggled from the forests or PAs and transported without the transit pass on roads – where the movement of vehicles are subjected for checking by the Territorial Wing of the FD at the forest checking

gates and by FMS and by Police on night patrol and also by Commercial tax tolls. Unless these cross checks are made, the smuggling scandals will go scot free and will loot the forests.

iii. Issue of form no.28 permits and Form no-27 to the RFOs/ACFs by the DCFs should be in terms of- leaves equal to the quantity estimated or collected produce to be released and return and not in books to misuse as in the case of Saragur Range for timber/Gundlupet sub-divn for NTFPs. These permit laves should be shared by the officer empowered to grant permits.

iv. Another route available to plug smuggled timber to escape is plugging loopholes in sawmills. Now, timber sales are low and permits issued are low. But, the forest officers have a system to dispose of the timber lots put for sale in spite of its no bids in successive sales to avoid complications in writing off. The sale officers generally club the rejected lots with the high value lots and give them free to the bidders and clear the depots on records.

For such rejected/perished lots sold – permits are issued to tally the timber accounts of the depots... Such permits are free to be issued without timber in stock is a source for the saw mills in timber zones to accommodate the smuggled timber into the saw mills. Hence, the Forest Department has to make the procedure simple for write off of the soft wood not sold/rejected/perished in depots with its face value-by attaching the photos after 2 or 3 sales in the interest of avoiding proxy sales and issue of permits for such timber being misused for smuggled timber in the mills.

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The inspiring dendrophiles

V.V.Hariprasad

He is a dendrophile
 He has a penchant for forests
 He strives hard for their protection
 And he is always prepared to bite the bullet

While incurring the wrath of political big wigs
 And he never forgot
 The day when the martyr "**Srinivas an IFS officer**"
 Was brutally beheaded
 By **Veerappan** the sandalwood smuggler
 A few decades back.
 The butchery of **Sreedhar the slain Dy.R.O**
 Caused by the stone throwing of a callous mob
 Of Red sanders smugglers
 In **Seshachalam hills of Tirumala** in the past
 Did not slip her mind

But being undaunted, she feels protection of forests

As her bounden duty
 She never dithers even to give away her life

For protection of flora and fauna of India
 And the sacrifices made by these patriots
 Continue to be unabated.

He and she are the "Foresters of India"

And their unflappability
 Speaks volumes of their devotion for nature
 And It is crucial that the citizens of India
 Are bound to bow their heads with gratitude
 Before these "**Foresters of India**"
 Who continue to sacrifice their lives
 At the altar of protection of Forest wealth
 Day in and day out
 Being oblivious of the plight of their dependents
 Who eke out their livelihood
 Solely depending on them and these sacrifices
 Inspire the citizens to protect forests and say
"Long live the forest fraternity of India."

P.S. The term Dendrophiles means persons who love or have deep, passionate affinity for trees and forests

(The author is a retired Deputy conservator of Forests and VANAMITRA AWARDEE of A.P and a practicing advocate who can be accessed at vvhp53@gmail.com or 7893673767



The Wonders of the Seshachalam Forest: A Forester's Memoir

P. Visweswaraiah

Tirupati district is endowed with a magnificent expanse of wilderness: the Seshachalam hill forest. Renowned for its breathtaking landscapes and rich biodiversity, this unique ecosystem holds both ecological prominence and deep spiritual significance.

Today, living in retirement just three-quarters of a kilometer from the forest boundary near Tirupati city, my day begins with a pranam toward the sacred Seshachalam hills—the abode of the Lord of the Seven Hills. The Tirumala shrine draws massive global devotion, attracting between 75,000 and 85,000 pilgrims daily. Accompanied by thousands of private vehicles and state buses, the offerings of these devotees culminate in daily Hundi collections exceeding 4 crore rupees.

Managing this unique confluence of faith and nature is a monumental task. While the Tirumala Tirupati Devasthanams (TTD) owns 10 square kilometers of forest land, it is entirely enveloped by a vast expanse of Reserved Forest managed by the Andhra Pradesh Forest Department.

Evolution of the Tirupati Wildlife Circle

The Seshachalam forest is an ecological marvel, blending varied forest types including dry thorny scrub, dry deciduous, moist deciduous, wet deciduous, and semi-evergreen forests tucked away in its deep valleys.

Because of the immense ecological and economic value of these woods, the administrative status of this region has elevated significantly over the decades. In 1985, when I served here as a Forest Range Officer (FRO), Tirupati was merely a territorial Range. Today, it has been elevated

to a full administrative Circle headed by a Chief Conservator of Forests (CCF), having been shaped by dedicated senior stalwarts such as Sri P.K. Sharma, Sri Bullaiah, Sri P. Mallikarjuna Rao, Sri M.K. Prasad, and Sri Nageswara Rao.

The pride—and simultaneously the vulnerability—of this forest is the endemic Red Sanders (*Pterocarpus Santalinus*). Because this wood commands exorbitant prices on the global market, it frequently attracts illicit timber networks, particularly from neighboring states like Tamil Nadu. To combat this, an anti-smuggling Task Force comprising forest and police officials was established in Tirupati around 2011 to secure the habitat from exploitation.

Exploring the Sacred Valleys and Waterfalls

Over my 33-year career in the department, I had the privilege of exploring the deepest, most restricted pockets of Seshachalam.

Thumbur Tirtham: A Sacred Canyon



Located 7 kilometers from Papavinasam on the Tirumala Hills, Thumbur Tirtham is a rugged, stone-filled valley hidden deep in the woods. Closed to the public for most of the year, it opens just once annually on Phalguna Pournami, allowing pilgrims to trek in and take a holy dip in its waters.

The canyon features a sheer, vertical slit through a rocky hill rising over 70 to 80 meters high, bearing a striking resemblance to the majestic Grand Canyon in Arizona, USA. According to mythology, the thirtham is named after a Gandharva who turned his wife into a toad through a curse, which was later lifted by the sage Agastya.

I first visited this valley during my tenure as FRO (1985–86) alongside the late sub-DFO, Shri Shyama Sundar. Our inspection notes prompted the then Conservator of Forests, the late Sri K.P. Muniswamy, to tour the site. Accompanying him on that second trip remains an unforgettable memory—eating dinner by the light of a campfire and sleeping deep inside the woods before trekking across natural ravines toward the eastern Mamandur forest the following morning.

Rare and Endemic Species

The national park protects highly threatened flora and fauna, such as the Indian Giant Squirrel—often seen leaping across streams in Talakona and Thumburakona—and the rare Indian Golden Gecko. The avian population is equally vibrant, with researchers identifying 178 species of birds, including the Large Hawk-Cuckoo, Yellow-browed Bulbul, and Loten's Sunbird.

Endemic Flora Protected in Sri Venkateswara National Park:

- Red Sanders (*Pterocarpus santalinus*)
- *Shorea talura* & *Shorea thunbergia*
- *Terminalia pallida*

- Sandalwood (*Santalum album*)
- *Cycas beddomei* (A rare, ancient cycad)
- *Syzygium alternifolium*

Talakona Waterfalls: The Hood of the Cobra



Novels often describe the Seshachalam hill range as a coiled cobra, with its tail ending at Srikalahasti and its majestic hood shaped at Talakona. Cascading from a height of 250 to 270 feet, Talakona is a perennial waterfall situated at the tri-junction of the Balapalli reserve, Seshachalam reserve, and the Kadapa district border.

Early in my career (1980–81), while serving as the FRO of Bakrapet, I was tasked with constructing a metal road leading from the Siddeswara Swamy temple to the waterfall point. Under the guidance of my DFO, the late Sri P.S. Sankara Reddy, and his successor, Sri R.D. Reddy—who directed me to install safety railings near the plunge pool—we opened this stunning locale to the world. It quickly became a major tourist hotspot and a favored location for film shoots. Decades later, during 2008–09, the ecotourism blueprint was expanded under CCF Sri P. Mallikarjuna Rao and DFO Sri S. Krishnaiah, who established a community-based ecotourism project featuring guest houses, cottages, and an admirable canopy walkway.

Gunjana Waterfalls: The Sanctuary's Apex

In June 2009, just months before my retirement, I joined an inspection team led by our Head of Department, Principal Chief Conservator of Forests (PCCF) Sri C. Siva Shankar Reddy, and CCF Sri P. Mallikarjuna Rao.

Journeying in jeeps from Oblapuram westward, we visited Gunjana Waterfalls. Though seasonal, Gunjana holds the distinction of being the highest waterfall in the sanctuary, plunging between 200 to 250 feet. Because of its massive height, it carves out an incredibly deep plunge pool at its base, making it a dramatic but challenging water source for the local wildlife.

A Haven for Rare and Endangered Wildlife

The ecological significance of Seshachalam culminated on September 28, 2010, when it was designated as Andhra Pradesh's first Biosphere Reserve under UNESCO's Man and the Biosphere Program. Managed by the Ministry of Environment, Forest and Climate Change (MoEFCC), the reserve and the overlapping Sri Venkateswara National Park protect a stunning array of biodiversity.

Predators and Prey

The sanctuary spans nearly 12,000 hectares, providing ample territory for apex predators. While leopards (panthers), golden jackals, Indian foxes, civets, and jungle cats are plentiful today, tigers have vanished from the modern landscape. However, past records confirm their historical presence; legendary hunter-author Kenneth Anderson was once commissioned by the District Collector to track and eliminate a notorious man-eating tiger in the nearby Chamala forest.

The primary prey base consists of wild boars, barking deer, spotted deer, and sambars. In recent years, migrating herds of Asian elephants

from Tamil Nadu have crossed into Mamandur, Tirumala, and Talakona, finding a sustainable home in the region's dense bamboo thickets and abundant water pools.

A Golden Encounter: The Slender Loris

Of all my wildlife encounters, one of my most cherished moments occurred at the tail end of my career. For 33 years, I had never managed to spot the elusive, nocturnal Slender Loris (*Loris lydekkerianus*), known locally as the Devanga Pilli. Found only in parts of southern India and Sri Lanka, this small, arboreal primate looks like a tiny cat with a monkey's face and large, luminous eyes.

In June 2009, while serving out my final months as DFO of the Forest Protection Squad (FSP) in Tirupati, I was returning from a night anti-smuggling raid along the Kodur-Rajampet route. Halting at dawn at the Anjaneyapuram forest checkpoint, I encountered a local tribal man who was temporarily detained by our guards. In his hands, he gently held a Slender Loris.

I watched with absolute awe as the shy creature slowly rotated its protruding eyes in multiple directions, much like a chameleon. The tribal man explained that these animals live entirely in the high tree canopies, terrified of descending to the forest floor where carnivores roam.

When my official retirement day arrived on August 31, 2009, I stepped

away from the department filled with profound gratitude. Over a lifetime of service, the wilderness had blessed me with unforgettable sights: the magnificent lions of the Gir Forest in Gujarat, the grand tigers of the Nallamala hills, and finally, the quiet, innocent gaze of a Slender Loris in the heart of the wonders of Seshachalam.

Source: TTD publications and Web.

Author is a Retired Divisional Forest Officer (DFO)



THRIVING POPULATION OF TIGERS (BIG CATS) IN AMRABAD TIGER RESERVE IN TELANGANA

C. Ramakrishna Reddy

1-0. PREAMBLE :

Amrabad Tiger Reserve is formed and named after the bifurcation of composite Andhra Pradesh into Telangana State and Andhra Pradesh state during 2014. Prior to this act, the whole Nallamala forests had only one Tiger Reserve namely Nagarjunasagar Srisaillam Tiger Reserve. Krishna River passes through Nallamala forests, with its left bank or Northern side on Telangana and its Right bank or Southern side in Andhra Pradesh.

1-1. DIVISION OF NSTR :

nagarjuna Sagar Srisaillam Tiger Reserve has been divided into two tiger reserves and one sanctuary namely.

(1) Nagarjuna Sagar Srisaillam Tiger Reserve with H.Q at Srisaillam – in Andhra Pradesh.

(2) Gundla Brahmeswaram sanctuary in Andhra Pradesh – Nandyal forest division and Atmakur Division, AP

(3) Amrabad Tiger Reserve in Telangana on either side of Dindi – Srisaillam Ghat Road with H.Q at Amrabad.

1-2: TIGRESS FARAH IS A MATRIARCH (SUPER MOMMA) :

Originally Amrabad tiger reserve had only three tigers. Now it hosts 36 big cats (tigers). It is heartening to note that tigress FARAH (known as F6) is the main contributor for this phenomenal resurgence. Farah has given birth to two cubs in 2019. Her descendants fill the Amrabad Tiger Reserve to

an extent of 50% of tiger population. FARAH, is rightfully gained the tag SUPER MOMMA (MATRIARCH). Farah has littered four times in total, with her most recent birth in 2025 bringing three more cubs into the family, she was named FARAH since she was primarily spotted in Farahabad which was once the Hyderabad Nizam's hunting ground.

1-3: FARAH'S LINEAGE :

Farah's daughter F18 has followed in her Mother's footsteps becoming a prolific breeder herself. This tigress was spotted by local chenchus at Bowramma temple. Hence chenchus named her as Bowramma. Bowramma tigress's four cubs delivered during 2022 survived. All the cubs are carefully nurtured before transitioning into safety of forested land under close supervision of reserve staff and the chenchus (tribals).

1-4: NAGAR KURNOOL DFO'S ENCHANTED OPINION :

Former Nagarkurnool DFO Sri Rohith Gopichand, IFS opined, "Farah has become the cornerstone of big cat population here, with her recurring sightings and the tigers of her lineage forming the bed rock of conservation efforts".

2-0: GENETIC HEALTH AND THE ROLE OF MALES :

Allaying the fears of inbreeding, Amrabad has managed to maintain its genetic diversity, through the migration of male tigers from the

neighboring source population of NSTR and GBM in Andhra Pradesh. Tigers often cross the river Krishna that divides the two Telugu states, during the dry summer months. Male tigers like M(19), who is the Alpha Dominant, Male of the Amrabad Tiger Reserve regularly swim across the Krishna River to mate with Females (Tigresses) according to the foresters, M(19)'s dominance is now being challenged by a new comer M(16) whose arrival is shaking up the status quo.

2-1: MAINTAINING GENETIC DIVERSITY :

Sri Rohit Gopidi DFO Nagarkurnool opined, "Male tigers from across larger territories covering multiple ranges of the reserve move around, while females stay within defined home ranges". "This movement of male tigers from Nagarjuna Sagar, Srisaillam Tiger Reserve and Gundla Brahmeswaram wild life sanctuary of Andhra Pradesh to Amrabad Tiger Reserve of Telangana allows us to maintain a hereditary vigor of the population and keep up gene pool diverse".

2-2: REIGNING QUEEN'S LEGACY – A MODEL OF SUCCESS:

Farah's legacy as both a mother and matriarch (super momma) goes beyond the number of cubs she has produced – It is about the remarkable survival rates of her offspring. Wildlife biologist D.Mahender Reddy credits the strong survival instincts and resilient genes of Farah's lineage for their success. Other prominent females like F7, known as Tara, have also played an important role in the Reserve's growth. Although she is not related to Farah, Tara's three litters – two of which were sizable, each with four

cubs, have enriched the genetic diversity and vitality of the reserve.

3-0 : CONSERVATION THROUGH COLLABORATION :

The success of Amrabad is mainly due to the spontaneous, willing, tiger friendly collaboration between forest officials and the chenchu tribal community. They are the skilled trackers to ensure the safety and well-being of the tigers (Big Cats). Residents of the forest, their knowledge of landscape and tiger behavior help the foresters to forge the Amrabad Tiger Reserve as a top most fascinating and amazing Tiger Reserve in Telangana.

3-1: USE OF MODERN TECHNOLOGY :

The Reserve's officers and staff actively adopted latest technology in the management of the reserve. They said, "Alongside the human tracking, we use advanced tools developed by wild life institute of India like Pink Evolve, AI-driven software that monitors prey spatial density and tiger ID, to identify and track individual tigers.

4-0: INCREASE IN ECO-TOURISM REVENUE :

It is heartening to note that Amrabad's eco-tourism revenues have increased since the formation of Telangana which also benefitted local community and provided jobs to 127 chenchu tribals as guides besides supporting the establishment of 17 local homestays.

4-1:FARHA, AMRABAD'S SUPER MOM TIGRESS, IS NOW A GREAT-GRAND MOTHER :

The iconic "Supermom" of the Amrabad Tiger Reserve, tigress FARHA, crossed a major mile stone in its life in 2025 with one of her

“grand children” delivering.

4-2 : F18 FEMALE TIGRESS IS A NEW STAR :

F18 a female tigress a first born of Farha in 2019 which has so far given birth to cubs twice, has emerged as the star this year in the ongoing story of the “first tiger family” of amrabad. While F18 too has reportedly had a first litter in 2025, one female from among her first born 2021 numbered F38 is now a first time mother – how many cubs she gave is not known.

4-3 : YEAR 2025 A SPECIAL FOR AMRABAD TIGER RESERVE :

This makes the year 2025 a very special one for Amrabad Tiger Reserve with three generations of tigers from a single family tree, giving birth to cubs.

4-4 : FARHA LEFT HER ORIGINAL TERRITORY :

Incidentally, as it happens in the tiger world, Farha left her original territory in the Farhabad range and has moved further into the forest as F18, her daughter took over what was her mother’s territory and during this year’s safari season, has been putting up periodic appearances during the morning and evening jungle safaris in the reserve.

4-5 : EVERY CUB IS A CELEBRATION : EPILOGUE :

The tiger reserve of Amrabad celebrated Farah turning into a great – grandmother with F18’s daughter, F38 giving birth in 2025. A senior reserve official said “why not? it is a moment of celebration. Every cub is a celebration”.

Author is a Retd. DFO of composite Andhra Pradesh, an aluminus of Madras Forest College Coimbatore, 1952-54 Batch of Forest Apprentices. Contact Mobile No. 9347593393 / 8125325399.

Eco-Philosophy

Eco-Philosophy, the meaningful integration of ecology and philosophy, offers a solution to sensitise world politics. Politics is the outcome of a philosophy of governance aligned with peoples’ aspirations. Peoples’ deep aspirations lead them to wish: Life must be nurtured in an environment that paves the way for a secure, sustainable and happy future for generations to come. Our future not only means a future for humankind, but for all living beings evolved in the biosphere

-Vir Singh



Green Quiz – JUNE 2026

Quiz Master: Dr. K. Tirupataiah

1. What did Assoc Professor Shashi Thutupalli and Ph.D scholar Nayan Chakraborty of the National Centre for Biological Sciences Bengaluru recently prove what Professors Krishna Bahadur and S.Ranganayaki discovered in the 1960s?
2. The 22nd Artillery supply co of Poland has an official insignia of a Bear carrying an artillery shell on its back, in memory of a bear that served in the CO. Name the Bear.
3. What is the name of the Serpent deity in El Castillo chichen Izta, in the Yukatan region of Mexico?
4. Krithi Karanth is the first Indian to win what prize of the Royal Geographical Society of UK?
5. Born in a Royal family in Ceylon and married in Bengal, her Bachan/Vachan in couplet format are still folklore in Bengal and used by farmers to predict rainfall, weather and agri. techniques. Name her.
6. The World and India are going through a shortage of CNG/LPG. What gas obtained through gasification process has been promoted by "Jindals" to generate an alternate fuel?
7. In which place in Italy do people have names of trees, animals etc. No two people have the same name. People can gift their names to others and

chose a new name?

8. Which manually pollinated fruit crop rich in beta carotene and lycopene (cancer preventing qualities) popularly known by the name of a South-East Asian nation?
9. What is the equation between LPG and PNG?
10. Against which tribe that predominantly resides in the Terai region, did the UP govt recently decide to withdraw a case booked in 2012 against over 4000 tribals?

For School Students

1. Chinese Taipei's 101 is the first building to exceed 500 M height. Its green hue and tiered design are inspired by a natural material long used in construction. Name it.
2. Scorpions can hold their breath for over 6 days. What is special about their lungs?
3. What is the name of the Poetry that Prime Minister Narendra Modi wrote on Peacock?
4. The winning design for the first Earth Day had three "chasing arrows". What did they symbolize?
5. Which woman conservation biologist and CEO of Centre for Wildlife Studies has done pioneering work on building awareness among children on Human-animal interactions?

Answers on page no :55

The Government

The way people in democracies think of the government as something different from themselves, is a real handicap. And, of course, sometimes the government confirms their opinion

-Lewis Mumford



SAGA OF KARLAPALLI FOREST

(Forest Lost and Forest Regained)

K. Buchiram Reddy

Karlapalli is a village previously in Warangal district, now in Mulug district. The whole village in the distant past was granted on Ijara. The word 'Ijara' has Arabic origin meaning lease. There was an ancient law under the Nizam's Government called "Deserted Villages (Ijrara) Dastur-ul-amal of 1292 Hijri. The intention of the law was to establish more number of homesteads and bring more land under cultivation. The period of lease was usually 30 years and at the end of the lease period, there used to be settlement of rights of Ijaradar by an officer of the rank of Awal Talukdar (District Collector) and if the conditions of lease are complied, the Ijaradar gets grant of Bilmaktha (land grant with concessional assessment) and patta in addition to bilmaktha. This scheme being not profitable was rescinded.

Settlement of Ijara rights took place after end of lease period and one Sri T.V.K. Sastry was the successor in interest of the Ijaradar. He claimed rights of ownership over Sy. Nos. 173, 174 and 175, which supported good forest. But much before, these lands among others were included in Bandal Forest Block which was proposed to be constituted as a reserved forest.

In the year 1961, an Act was enacted for cancellation of irregular pattas under its short- title: The Ijara and Kowli Land Cancellation of Irregular Pattas and Abolition of Concessional Assessment Act. Sec. 3 of the Act provides for cancellation of all those pattas which are in the reserved forest or in the proposed reserved forest, if the pattadar is not put in actual possession, such patta shall be deemed to have been cancelled. Karlapalli Ijara

lands are attracted by this provision, because the lands are in the proposed reserved forest.

In 1962, rules were made for giving effect to the provisions of the Act. Under Rule 3, the Tahsildar was empowered to determine the land attracting the provisions of the Act, which cancelled already the patta rights. The Tahsildar concerned misdirected himself and held that the Act does not apply to the patta lands of T.V.K. Sastry. The Act cancelled the patta rights already subject to certain conditions. The Tahsildar was expected to hold a summary enquiry with the D.F.O concerned and pass an order which he was mandated to do under the law. But the Tahsildar did what he should not have done, and did not do what he should have done.

When the Government pleader for Forest at the High Court was consulted, his opinion was to file a revision petition against the Tahsildar's order.

Accordingly, revision petition was filed on behalf of the CCF before the Commissioner Land Revenue. The case was heard by The CLR while the Asst. G.P argued the case. The result was disappointing. The revision petition was dismissed.

We filed further revision petition before the Government. The order of the Commissioner Land Revenue was stayed. The Revision Petition was heard by the then Revenue Minister. A few days after the hearing, the stay order against the order of the C.L.R. was vacated. I smelt a rat. As suspected the Revision petition of the CCF was dismissed on 16.10.1979. I came to know that behind all this, some influential forces were

working behind the scene. It was also understood that before the Government issued the order on the revision petition of the CCF, The Advocate General was consulted and the A.G supported the provisional conclusion to dismiss the revision petition of the CCF.

The then CCF Sri P.S. Rao was disappointed with the outcome; and sought the permission of the Government to file a writ petition challenging the decision of the Government in Revenue Department. The permission never came. The then Addl CCF said: "We have done enough and there is nothing more for us to do." But I was not happy with the situation. I approached the Secretary to Government in the Revenue Department. He suggested exploring the possibility of filing a Public Interest Litigation (PIL). We must find a volunteer to do the job. Capt. N.S. Tyabji, a nature lover and a former representative of the WWF consented to file the petition. The next task was to find a senior and efficient Advocate to appear and argue the matter. When approached through friends and well-wishers, Sri Koka Srinivasa Murthy, a senior Advocate, agreed to appear and argue the PIL for gratis.

For drafting the PIL I took the assistance and guidance from Sri P. Raja Rao, Government Pleader for Forests and Sri A. Suryanarayana Murthy, Advocate.

The PIL No. 6869/79 was heard by the Hon'ble Justice Raghuvver. While allowing the petition, the order of the government in Revenue Department was quashed on February 22, 1980. The Commissioner of Land Revenue was directed to consider the matter de novo. The then C.L.R. Sri P.K. Doraiswamy after consideration of the matter in the de novo enquiry allowed the revision petition of the Forest Department holding that the disputed

land was in possession of the forest department. It was held notwithstanding the grant of patta, since the land was not in possession of the pattadar, the patta stands cancelled. There were a spate of other litigations in the matter, like Forest Settlement Officer's adverse order and an appeal in the District Court; A Civil Suit in the Sub-Court at Warangal etc.. All these matters including a Writ Appeal fell for consideration before a Division Bench of the Hon'ble Justice Jeevan Reddy and Hon'ble Justice Jagannadha Rao. The matters were elaborately argued by both sides. The writ Appeal No. 256 & 257 of 1980 and the Writ Petition No. 19616/1987 filed by the pattadar, against the order of C.L.R. cancelling the patta, were dismissed. The long drawn battle - forest land lost and forest land recovered - ended up happily to my utmost satisfaction.

The Government Pleader Sri P. Sitarama Raju in his D.O. letter dated 23.3.1988 addressed to the then Prl.CCF Sri K.V.S. Babu, said as follows:

"The Forest Department should be grateful to Capt. N.S. Tyabji. Though he was not actively represented in the above matters before the Division Bench and it fell upon the Forest Department alone to actively defend the matters, he was responsible for getting the matter reopened which was already concluded. The Government at one stage was supporting the pattadar. But for his timely intervention, by filing the PIL writ petition and getting the matter remanded, the State would have lost the abundant forest wealth in question."

"I will be failing in my duty if I do not record appreciation of my esteemed friend, Sri K. Buchi Ram Reddy, IFS for the able assistance rendered to me on every aspect in dealing with these matters."

Sri E. Manohar, Advocate General, Andhra

Pradesh, in his letter dated 23.3.1988 addressed to Sri K.V.S. Babu, I.F.S., the Prl.CCF and Ex-Officio Secretary to Government wrote about my performance in the following words:

"I am of the view that the Government/Department should recognize the meritorious efforts of Sri K. Buchi Ram Reddy, I.F.S."

I worked in true spirit of the message of Lord Krishna: Karmanievaadhikaarasthe; Maa phaleshu kadaachana.

A letter of appreciation dated 14.11.1986 was sent to me by the Prl.CCF AP Sri K.V.S. Babu, IFS through the Director General, A.C.B. eulogizing my services to the Forest Department. An extract reads as follows:

"Sri K. Buchi Ram Reddy has exhibited a high sense of duty and consciousness for protecting an invaluable property of the Government. But for his zealous efforts in breaking the evil designs of the interested parties, the vast estate of forest would have fallen in the hands of some unscrupulous men and the interest of the State would have suffered".

I recall another great memorable event. Sri P.S.

Rao, CCF fell sick, while he was still in service at Hyderabad. When I called on him to enquire about his health, he confided to me, "Strictly speaking, I did not understand fully what notes you gave in the files; but I gave approval of every draft you put up to me, because I have confidence in you." After a few years of stay in Hyderabad following his retirement, Sri P.S. Rao left for Guwahati in Assam. For a number of years, he used to enquire about the progress of cases pursued by me. That was his love and commitment for the work I had undertaken. In one of his letters, dated 23.11.1996, he had written as follows:

"Even though Capt. Tyabji was the visible hero of Karlapally, the real hero was K.B.R. - behind the scene and real hero - who knew the Ijara Act and Rules. There were many stalwarts of Hyderabad Forest Service who knew nothing of the Ijara Act. There is only one, and the only one K.B.R. who was a master of the Ijara Act. Rising from the ranks, K.B.R. mastered the Forest Law and the Ijara Act. It was K.B.R. who saved the Karlapalli forest. Capt. Tyabji was only visible instrument in the chain, who used to sing in praise of K.B.R., the invisible hero."

NOTE: The Author is a Dy.C.F, retired as Joint Director, ACB, AP. He is on Ph. 966 609 7788.

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Answers: 1. Jeewanu, 2. Wojtek (1942-63), 3. Kukulcan, 4. Esmond B. Martin prize, 5. Kshana or Khana, 6. Syngas or Synthetic gas, 7. Damanhur in the valley of Valchiusella, 8. Vietnamese fruit, Gac, 9. 750 gms of LPG equals to 1 unit (cum) of PNG, Pokhran, Rajasthan, 10. Tharu tribals

For School Students: 1. Bamboo, 2. Book-like lungs that store air in large quantity, 3. Man Mohak Mor Nirala, 4. Recycle, 5. Krihi Karanth



LEGAL NOTES

Sri. K. Buchiram Reddy

Santosh Kumar Patil Vs. State of M.P (At Jabalpur)

(Death of Barking Deer-Is it Accidental or Deliberate?)

The petitioner is a driver. He was driving a car Maruti Suzuki bearing Registration No. MP-20-CH-1830 on 05.01.2022 at about 09.030 a.m at Amma Nala Basti Dumma Road, the car struck a male Barking Deer and as a result the animal sustained fatal injuries and subsequently died.

In the course of enquiry, it was found that the offending vehicle was registered in the name of Ashutosh Garg which was being used by his wife Smt. Jyoti Garg.

On information, the forest officer reached the spot and started investigation. A case, Forest Crime No. 281/04, was registered. It was revealed that the vehicle was being driven by the petitioner. He was arrested and produced before the Judicial First Class magistrate, Jabalpur. The Magistrate released him on bail. The Criminal Court proceedings are sought to be set aside on the ground that it was merely an accident as the Barking Deer came on the road and before the driver could stop the vehicle, the animal got struck. The Petitioner submitted that he had no intention to kill the animal.

The petitioner filed the present petition under Sec. 482 Cr.P.C. read with Sec. 528 of the Bharatiya Nagarik Suraksha Sanhita 2023 requesting to quash the proceedings in criminal case before the Judicial First Class Magistrate, Jabalpur. In support of his argument, the judgment in Shaju Paul & Ors

Vs. the State of Kerala was cited. In that case, when an elephant was being transported by a truck, the elephant's head got struck with the roof of the Petrol pump and as a result the elephant sustained severe injury and died. This case was treated by the Kerala High Court as an accident.

On behalf of the Respondent State, it was submitted that on the basis of the material available, a case was registered against the petitioner. It would not be proper to quash the proceedings before the Magistrate and the Petitioner is liable for the punishment for the offence under Sections 9, 39 and 50 of the Wildlife Protection Act.

The Hon'ble Justice Sanjay Dwivedi went through all the provisions of the Wildlife Protection Act and considered the circumstances under which the incident occurred. It was held on 08.05.2025 that the petitioner made no attempt for hunting or killing the animal and took into consideration all the circumstances in which the incident occurred.

It was further observed that the Dumna Road which is a public road and a busy road where there is heavy traffic; there is a dent on the car as the deer hit it. The Barking Deer died on account of the accident. It was a case of death of the wild animal by accident. The proceedings before the Court of Judicial First Class Magistrate are quashed and the petitioner is set free of all charges against him.

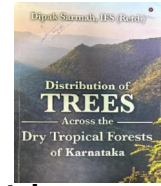
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BOOK REVIEW

Reviewed by: Dr B Raghotham Rao Desai



Title: Distribution of TREES Across the Dry Tropical Forests of Karnataka

Author: Dipak Sarmah, IFS (R) Language: English Pages: 344

Year: 2026 Price:715/-- Publishers: notion press, Chennai-600005.

“The TREES in Nature increasingly provide solace being sought, when the world is teetering on fragility ---- growing more fragmented with each passing day”

About eight years after the publication of his iconic book ‘Status of Forests of Karnataka’ ---- introducing himself to the world and simultaneously announcing what a potential author is dormant in him ---- **Dipak Sarmah relentlessly authored and got published an avalanche of 13 books of rare quality on forests** (keeping Karnataka all through at the back of his mind), the versatile writer has now returned with an exuberant, richly told story through this anthology & provocative work **“Distribution of TREES Across the Dry Tropical Forests of Karnataka”** (published at the commencement of the year 2026) as captivating as ever: **proffering its characteristics among the most memorable, by adopting tantalizingly accentuating various kinds of touches** (inserted in the narration) with other embellishments. The readers are urged to look beyond the ritualistic display of the descriptions made ---- based on years of observations made by him (during the decades of immersion into the affairs of the state’s forest problems).

The meticulously researched and beautifully compiled voluminous text, spread over 344 A4 size pages (including 9 for preliminaries, 31 for summary & conclusion and 51 for Annexures & References), divided in 17 chapters, is pleasantly bound ---- **bringing the little known stories vibrantly to life, making the**

reader conjure that ‘he is minutely studying the requirements of the tree-lands the author has visited or covered in the 28 districts of the state cited’: braiding scientific insights with personal reflections, **with the Nation’s air-pollution dominating the news-cycle, it is hard for the insiders to think of it as a thriving hotspot** for India’s biodiversity: that’s where conservationist Sarmah’s new book comes-in as an unexpected-reminder, grounded in science & delivered with statistics that is rich in memory & metaphor ---- wearing his expertise lightly, welcoming readers into a subject that can seem too statistical and specialized.

The book stands out because **the author is not assuming that readers do not share his love of trees, animals, birds, forests, rivers & mountains** ---- his delight and discovery take center-stage: so, his advocacy lands in a way that feels persuasive, but never forced. **The descriptions of flora, fauna and the landscapes are marked by urbane felicity**, and as much for style as substance, in a detailed lyrical-way in almost every Chapter ---- making the reader pause to soak it in (and soon to get immersed that they become a co-traveller on an assumed journey through the length & breadth of Karnataka).

This sublime, immersive, gripping book, in short, moves the readers even as it makes one to think

---- despite such wide-ranging forays into several domains: the **writing being not weighed down by heavy erudition**. Readers willing to enter this World of State's Dry Tropical Forests will be treated to descriptive narrative that considers the analytical overview not as an entertainment but as an act of preservation ---- the growing-stocks we protect today may be the ones that protect us tomorrow.

It was impressive to find intense poetic-prose that confronted traumas the forests had

undergone ---- **exposing the fragility of wildlife** as one chances to shift from one Chapter to the other, of the incandescent book showing the work, not just about trees & tree-groves' struggles through the ages, but the **tragedy why the world has become so violent to inflict pain on them**, and the denizens inhabiting them. Instead of overwhelming or leaving the readers stunned or shaken, the book lingers softly like a familiar place needed, and that's its greatest strength.

The author is a retired IFS officer of Karnataka cadre and the Chief Editor of 'VanaVikas', a quarterly magazine of the retired forest officers of Karnataka. M-9886157158.

The Four Defects of Senses

Vedic scriptures talk extensively about this problem and go on to broadly classify four defects with our senses: 1. Bhram-to be deluded; 2. Pramad-committing mistakes; 3. Vipralipsa-tendency to cheat; 4. Karnapatava-imperfection of senses.

Sitting through an hour-long lecture and not remembering anything; seeing a mirage of water on the highway; mistaking a rope for a snake; and not being able to see objects too near or too far; all of these are manifestations to varying degrees of these sensory defects.

The answer lies in "Aparusheya", a Sanskrit word that translates to "not of human origin". Anything with defect cannot produce a perfect object. Sages and realized souls advised us to look for sacred scriptures . Scriptures serve as lighthouse to guide us on the path of righteousness. After all, it is not important as to who is right as compared to what is right

- Yudhishtir Govinda Das, ISKON



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**The Dark-fronted Babbler (*Dumetia atriceps*),
Puttur, Karnataka, May 2026**

**Photo Credit : Sri.Indaram Nageshwar Rao,
OWLS Warangal**

**Registered with RNI R.No. Teleng/2000/02185
Postal Regn. No. D/RNP/HCD-1154/2024-2026**

Posting at BPC-IV Patrika Channel, Nampally, Hyderabad-500001

To _____

If Undelivered, Please return to: Editor, VANAPREMI, Office of the Principal Chief
Conservator of Forests, Aranya Bhavan, 5th Floor, Room No.514, Saifabad, Hyd - 500 004, T.G.

Date of Publication-26/05/2026; Total Pages: 60; Date of Posting: 4th or 5th of Every Month.

Printed & Published by **Dr. Kota Tirupataiah, IFS (R)** on behalf of **Association of Retired Forest Officers**, of TG & AP.

Printed at **Venu Graphics**, D.No.2-1-392/1/6, Fever Hospital Signal, Nallakunta, Hyderabad-500044 and

Published from Room No. 514, 5th Floor, Aranya Bhavan, Hyderabad-500004.

RNI Regd. No. Teleng/2000/2185 | **Editor: Dr. Kota Tirupataiah, IFS (R)** | Email: tirupataiah.tsfa@gmail.com | Ph: 88855 32021