

Environmental Conservation Policies in Ancient Indian Texts and Inscriptions: A Historico-Ecological Perspective on Medicinal Plant Conservation and Climate Change Mitigation

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ABSTRACT

Contemporary climate change discourse is often framed as a distinctly modern problem requiring modern technological and institutional solutions. Yet a substantial body of environmental thought, regulatory practice, and community custom embedded in ancient Indian textual and epigraphic traditions demonstrates that questions of ecological balance, resource conservation, and sustainable governance were addressed systematically many centuries before the emergence of contemporary environmentalism. This paper undertakes a historico-ecological examination of environmental conservation policies embedded in Vedic literature, the Dharmashastra tradition, Kautilya's Arthashastra, the rock and pillar edicts of Emperor Ashoka, Puranic cosmology, and epigraphic records of tank and forest management from peninsular and northern India. It argues that these sources collectively articulate an early conservation ethic combining moral injunction, state regulation, and community stewardship, organised around principles of restraint, reciprocity, and the sanctity of non-human life. The paper further develops a comparative framework linking these ancient principles — protected zones, seasonal harvesting restrictions, water-tank governance, sacred groves, and the concept of the earth as a shared trust — to contemporary climate mitigation instruments such as protected area networks, common property resource regimes, the precautionary principle, and nature-based solutions. It concludes that Traditional Ecological Knowledge (TEK) drawn from India's classical past offers not merely symbolic value but practically transferable governance insights for present-day climate policy, particularly at the level of decentralised, community-anchored resource management.

Keywords: Ancient Indian environmentalism; Arthashastra; Ashokan edicts; sacred groves; Traditional Ecological Knowledge; climate change mitigation; environmental history; epigraphy

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INTRODUCTION

The Anthropocene has brought into sharp focus the ecological costs of industrial modernity, prompting scholars, policymakers, and civil society to search for alternative frameworks of human-nature relations that might inform more sustainable futures. In this search, ancient and indigenous knowledge systems have received growing scholarly attention as repositories of

tested ecological wisdom. India, with one of the world's longest continuous textual traditions, offers an unusually rich archive for such inquiry. From the hymns of the Rigveda and Atharvaveda to the administrative manual of Kautilya, from the rock-cut proclamations of Ashoka Maurya to the temple-tank inscriptions of the Chola and Vijayanagara periods, Indian civilisation produced a layered discourse on the human obligation to the non-

human world that combined cosmological reverence, ethical injunction, and enforceable state regulation.

This paper approaches these sources not as museum artefacts of antiquarian interest but as historical instances of environmental governance whose underlying logic — restraint on extraction, protection of keystone species and habitats, decentralised custodianship of common resources, and integration of ecological limits into political authority — bears directly on the design of present-day climate mitigation and adaptation policy. The central proposition advanced here is that ancient Indian environmental thought was not merely devotional or symbolic but operationalised through identifiable policy instruments: protected forests and wildlife reserves, closed hunting seasons, regulated water-tank maintenance, afforestation programmes along public roads, and community-enforced sacred groves. Read historically and ecologically together, these instruments constitute what may be termed an early conservation regime, whose comparative study with modern instruments yields insights of continuing relevance.

2. Objectives of the Study

- To identify and analyse environmental conservation principles articulated in Vedic, Dharmashastric, and Puranic literature.
- To examine Kautilya's Arthashastra as an early instance of codified state environmental regulation.
- To study the Ashokan rock and pillar edicts as epigraphic evidence of state-sponsored wildlife and forest protection.
- To document community-based conservation institutions such as sacred groves and tank-irrigation systems recorded in regional inscriptions.
- To construct a comparative framework linking ancient conservation instruments to contemporary climate change mitigation strategies.
- To assess the policy relevance of Traditional Ecological Knowledge (TEK) for present-day environmental governance in India.

3. Methodology

This study adopts a qualitative, interpretive historico-ecological methodology combining textual analysis, epigraphic study, and comparative policy analysis. Primary source material includes translated excerpts of Vedic and Puranic texts, the Manusmriti, Kautilya's Arthashastra, and the corpus of Ashokan Major Rock Edicts and Pillar Edicts, read alongside available epigraphic records pertaining to tank, forest, and grove management from Tamil Nadu, Karnataka, Odisha, and Rajasthan. Secondary literature drawn from

environmental history, historical ecology, and Indology provides interpretive context. The analytical framework is organised chronologically — from Vedic cosmology through Mauryan statecraft to regional epigraphy — and thematically, categorising each source under the conservation instrument it exemplifies: normative-ethical injunction, state regulation, or community custodianship. These categories are then mapped onto corresponding categories of modern climate governance to identify structural parallels and points of policy transferability.

4. Environmental Ethos in Vedic and Upanishadic Literature

The earliest layer of Indian environmental thought is cosmological rather than regulatory, articulating an understanding of the earth, waters, forests, and atmosphere as sentient and sacred participants in the cosmic order (rita). The Rigveda contains hymns addressed to natural elements — Prithvi (Earth), Apah (Waters), Vayu (Wind), and Aranyani (the Goddess of the Forest) — that frame these elements not as inert resources but as deities deserving reverence and restraint in use. The Atharvaveda's Prithvi Sukta, often referred to as the Hymn to the Earth, is among the most extensive early articulations of an ecological ethic in world literature, describing the earth as a shared mother whose forests, mountains, and waters sustain all beings and must not be violated.

The Isha Upanishad opens with the injunction that the entire universe is pervaded by the divine and should therefore be enjoyed only through renunciation, not through the appropriation of what belongs to another — a principle later scholars have read as an early statement of the doctrine of trusteeship: humans hold the earth's resources in trust rather than in absolute ownership. This trusteeship principle recurs across the Dharmashastra tradition and anticipates, in ethical substance, the modern legal doctrine of the public trust, now invoked in Indian environmental jurisprudence and in international climate law regarding the atmosphere as a global commons.

5. Dharmashastra Literature: Codified Ethical Restraint

The Smriti literature, particularly the Manusmriti and the later Dharmashastra digests, translates cosmological reverence into codified prohibitions and prescribed penances. Injunctions against unnecessary felling of fruit-bearing and shade trees, against polluting rivers, tanks, and wells, and against indiscriminate killing of animals appear alongside prescribed expiations (prayashchitta) for their violation. While these

provisions functioned within a framework of ritual purity rather than secular environmental law, their practical effect was to impose social and religious costs on ecologically destructive behaviour, functioning analogously to a modern Pigouvian tax or environmental penalty designed to internalise the cost of ecological harm.

The Puranic corpus extends this ethic through narrative rather than injunction, associating specific trees, rivers, and animals with particular deities — the peepal and banyan with Vishnu and Brahma, the Ganga and other rivers with goddess status, cattle, elephants, and serpents with divine vehicles or protective associations. This deification of biodiversity is widely recognised by environmental historians as a mechanism of indirect conservation, discouraging the destruction of ecologically significant species and landscapes through the reinforcement of religious taboo rather than direct legal command.

6. Kautilya's Arthashastra: An Early Codified Environmental Administration

Where Vedic and Dharmashastric material offers ethical and cosmological restraint, Kautilya's Arthashastra, composed in the Mauryan period, provides the most systematic pre-modern Indian instance of codified state environmental administration. The text prescribes a dedicated bureaucratic apparatus for natural resource governance, including the office of the Kupyadhyaksha, superintendent of forest produce, responsible for regulating the harvest of timber, medicinal plants, and other forest commodities, and the Sitadhyaksha, superintendent of agriculture, charged with irrigation planning and water management.

The Arthashastra distinguishes between different categories of forest — including reserved forests maintained for specific royal and commercial purposes and protected forests designated explicitly for wildlife, described as abhayaranya or zones of fearlessness where hunting was prohibited — an institutional precursor to the modern wildlife sanctuary. The text prescribes graduated fines for offences ranging from unauthorised felling of trees to killing of protected animals, with penalties calibrated to the ecological or economic value of the species or resource in question. Elephant forests (hastivana) received particular administrative attention given the elephant's military and economic importance, with dedicated wardens responsible for their protection and sustainable capture. Water resource management is treated with comparable rigour: the text discusses the construction and maintenance of reservoirs, canals, and tanks, and assigns responsibility and liability for damage to irrigation infrastructure, reflecting an early

recognition that water security required both engineering and regulatory investment.

7. The Ashokan Edicts: State Conservation Policy in Epigraphic Form

The rock and pillar edicts of the Mauryan emperor Ashoka (third century BCE) constitute the earliest surviving epigraphic evidence anywhere in the world of state-promulgated wildlife and environmental protection policy. Major Rock Edict I records restrictions on animal slaughter for ritual feasting at the royal court. Major Rock Edict II records the emperor's provision of medical treatment for both humans and animals across his realm and in neighbouring kingdoms, along with the planting of medicinal herbs and the digging of wells and the planting of shade trees along roads for the welfare of both people and animals — an early instance of public infrastructure explicitly designed with ecological and animal welfare considerations in mind.

Pillar Edict V is the most detailed conservation document in the corpus. It enumerates a specific list of animal species declared inviolable from slaughter, restricts the burning of forests and chaff containing living creatures, prohibits the killing of animals for sport, and designates certain days of the month, tied to the lunar calendar, on which the killing and sale of fish and other animals was forbidden altogether. This constitutes, in effect, a seasonal closed-season regulation comparable in structure to modern fisheries and hunting moratoria designed to protect breeding cycles. Pillar Edict VII further records road-side plantations of banyan and mango trees and the digging of wells at regular intervals, integrating ecological provisioning into the infrastructure of the Mauryan state. Taken together, the edicts demonstrate a coherent state conservation policy combining species protection, habitat protection, seasonal harvesting restriction, and public ecological infrastructure, promulgated through inscriptions placed at prominent public locations to ensure administrative and popular compliance.

8. Regional Inscriptions: Water Management and Community Conservation

Beyond the imperial Mauryan corpus, regional inscriptions from later periods provide evidence of sustained institutional attention to water and forest management at the local level. Inscriptions from the Chola period in Tamil Nadu record detailed provisions for the construction, desilting, and maintenance of irrigation tanks (eri) by village assemblies, with maintenance obligations distributed among landholders in proportion to the benefit received — an early example of a locally administered common-pool resource regime.

Similar tank-management inscriptions from Karnataka and Andhra regions record endowments (often temple-administered) dedicated specifically to tank repair and desilting, indicating an institutionalised, revenue-linked approach to water infrastructure sustainability that anticipates modern participatory irrigation management. The Sohgaure copper-plate inscription, generally dated to the Mauryan or pre-Mauryan period, is understood by historians to record provisions for the establishment of grain storehouses against famine, reflecting an early administrative recognition of the link between resource scarcity, climatic stress, and the need for planned resilience — a concern structurally similar to contemporary food-security dimensions of climate adaptation planning. Temple inscriptions from various regions also record grants of land and revenue for the maintenance of groves and gardens attached to temples, embedding conservation obligations within religious endowment law and thereby securing long-term institutional continuity independent of any single ruler's patronage.

9. Sacred Groves: Decentralised, Community-Anchored Conservation

Perhaps the most ecologically significant and continuously surviving institution of ancient Indian conservation is the sacred grove — patches of forest protected from felling and hunting by community religious sanction rather than state law. Known regionally as Devrai in Maharashtra, Sarna in Jharkhand and Chhattisgarh, Kavu in Kerala, Oran in Rajasthan, and by comparable names across other regions, sacred groves function as community-governed biodiversity

reserves, often associated with local deities or ancestral spirits, and enforced through social taboo, ritual sanction, and customary law rather than codified statute. Ecologists studying surviving sacred groves have documented their disproportionate contribution to regional biodiversity conservation, frequently preserving relict vegetation, rare and locally extinct species, and groundwater recharge zones that would otherwise have been lost to agricultural or settlement expansion. The eighteenth-century Khejarli sacrifice, in which members of the Bishnoi community in Rajasthan gave their lives to prevent the felling of khejri trees around their village, though later than the ancient period proper, is widely regarded by environmental historians as the visible culmination of a much older customary conservation ethic rooted in the same textual and cosmological traditions discussed above, and it remains a frequently cited precedent in Indian environmental jurisprudence and activism, including the Chipko movement of the twentieth century.

10. Comparative Framework: Ancient Instruments and Modern Climate Policy

Read together, the sources examined above reveal a layered conservation regime combining three distinct governance modes: cosmological-ethical restraint (Vedic and Puranic literature), centralised state regulation (the Arthashastra and Ashokan edicts), and decentralised community custodianship (sacred groves and tank-management institutions). Each of these modes has a recognisable structural counterpart in contemporary climate and biodiversity governance, summarised in the table below.

Ancient Instrument	Governing Source	Modern Policy Parallel
Protected forest zones (abhayaranya); inviolability lists	Arthashastra; Ashokan Pillar Edict V	Wildlife sanctuaries and protected area networks; endangered species schedules
Seasonal restrictions on fishing and hunting	Ashokan Pillar Edict V	Closed fishing/hunting seasons; breeding-cycle moratoria

Ancient Instrument	Governing Source	Modern Policy Parallel
Roadside afforestation, well-digging	Ashokan Major Rock Edict II, Pillar Edict VII	Public green infrastructure; nature-based solutions; urban afforestation schemes
Village-managed tank desilting and maintenance	Chola and regional inscriptions	Participatory irrigation management; community-based water governance
Sacred groves protected by social taboo	Regional custom and temple inscriptions	Community forest reserves; Joint Forest Management; biodiversity heritage sites
Trusteeship doctrine (earth held in common, not owned absolutely)	Isha Upanishad; Dharmashastra	Public trust doctrine in environmental law; global commons framing of the atmosphere
Graduated fines for ecological offences	Arthashastra	Environmental compensation and penalty regimes; polluter-pays principle
Famine granaries as resilience infrastructure	Sohgaura copper-plate inscription	Climate adaptation and food-security planning

This comparative mapping suggests that several instruments now regarded as innovations of twentieth-century conservation biology and climate policy — protected area zoning, closed seasons, common-pool resource co-management, and trusteeship-based legal doctrine — have deep structural precedents in ancient Indian governance. The significance of this observation is not merely historical vindication but practical: institutions that combine ethical legitimacy, decentralised enforcement, and state backing, as the ancient Indian examples did, have historically proven more durable and locally compliant than purely top-down regulatory regimes, a finding consistent with Elinor Ostrom's influential work on the governance of the commons, which identified community-based rule-making and monitoring as critical determinants of sustainable resource management.

Discussion: Relevance for Contemporary Climate Change Mitigation

The contemporary climate crisis is, at its core, a crisis of resource governance operating at scales ranging from the individual village tank to the global atmospheric commons. The ancient Indian materials examined in this paper suggest at least four transferable policy insights. First, the integration of ecological restraint into the moral and religious fabric of society, as seen in Vedic cosmology and Puranic taboo, achieves a form of behavioural compliance that purely regulatory approaches often struggle to secure; contemporary climate communication and behavioural policy design may benefit from renewed attention to culturally resonant framings of ecological obligation rather than purely technocratic messaging.

Second, the Arthashastra and Ashokan edicts demonstrate that centralised environmental regulation is most effective when backed by dedicated administrative machinery, calibrated penalties, and public communication of the rules themselves — principles directly relevant to the design and enforcement of modern environmental legislation and Nationally

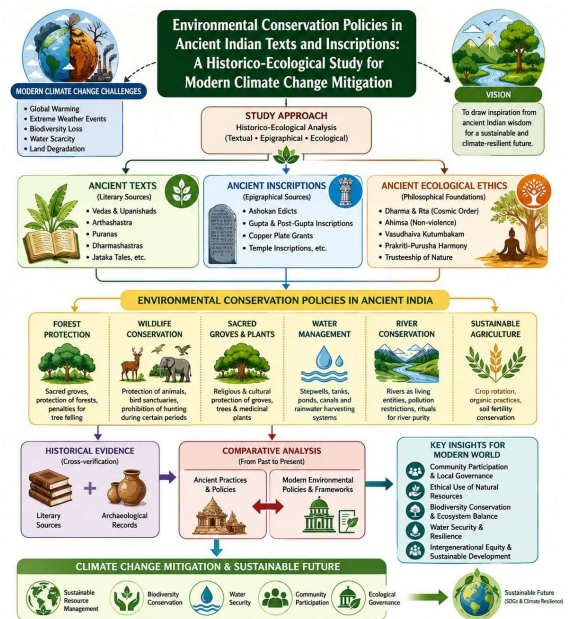
Determined Contributions under the Paris Agreement framework. Third, the sustained ecological performance of sacred groves and tank-irrigation institutions across many centuries underscores the comparative durability of decentralised, community-anchored governance, lending historical weight to present-day emphasis on Joint Forest Management, Community Reserves, and participatory water-user associations in India's climate adaptation strategy. Fourth, the trusteeship doctrine articulated in the Upanishads and Dharmashastra literature offers a philosophically grounded alternative to purely extractive or purely market-based framings of natural resources, resonating with the intergenerational equity principle that underlies the Sustainable Development Goals and the Intergovernmental Panel on Climate Change's framing of climate change as a matter of common but differentiated responsibility.

These insights should not be overstated. Ancient Indian society operated at a scale, technological level, and demographic density incomparable to the present, and its conservation regime coexisted with considerable environmental transformation through agriculture, urbanisation, and resource extraction; ancient conservation practice was not uniformly observed, and epigraphic and textual sources record ideals and prescriptions more reliably than they record actual ecological outcomes on the ground. The comparative framework proposed here is therefore best understood as a source of governance principles and institutional design insight rather than as a template to be transplanted uncritically into modern policy.

CONCLUSION

This study has examined a substantial corpus of Vedic, Dharmashastric, Arthashastric, epigraphic, and customary evidence to argue that ancient India possessed a coherent, multi-layered environmental conservation regime combining ethical restraint, state regulation, and community custodianship. The Ashokan edicts, in particular, stand as some of the earliest documented instances anywhere in world history of formal, inscribed state policy for wildlife and forest protection, while the Arthashastra offers a remarkably systematic bureaucratic model for natural resource administration. Sacred groves and tank-management institutions, meanwhile, demonstrate the long-term ecological effectiveness of decentralised, culturally embedded governance. As India and the wider world confront the accelerating impacts of anthropogenic climate change, this historico-ecological inheritance offers more than antiquarian interest: it provides a tested, indigenous vocabulary and institutional repertoire — trusteeship, seasonal restraint,

protected zones, and community stewardship — capable of informing a climate policy architecture that is not only technically sound but also culturally rooted and, consequently, more durable. Future research combining palaeoecological data with textual and epigraphic study would further strengthen understanding of the actual ecological outcomes of these ancient policies and their applicability to present-day mitigation and adaptation strategy.



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