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Editorial

Gitanjali Chawla & Deepa Sharma

Sustainable growth and development are the key buzzwords governing policies and processes world over. Broadly speaking, sustainability refers to integration of development and growth with consideration for the environment. The United Nations drew attention to sustainability by referring to it as "meeting the needs of the present without compromising the ability of future generations to meet their own needs"(1980)[i]. It is a long term goal which strives towards maintaining balance and equity between the economy and the environment. It factors in economic growth, environmental health as well as social justice , and inclusive practices. It recognises the intersectional ties between the above and reinforces a systemic approach to redress any imbalance. Sustainability is about what we make of the world and more importantly how we leave it for the future generations.

While world leaders and governments took cognisance of this only in the 1980s, India, however, had been sensitive towards this pressing issue much earlier as it integrated it in its ethos of *Karma, Dharma, Satya, Seva,* and more importantly in *Vasudhaiva Kutumbakam* focusing on the concept of the world being one family and the interconnectedness between one and all fostering inclusivity and sustainability. While *Dharma* reinforces ethical conduct and righteousness, *Karma* nurtures responsible choices and action, *Satya* is the path of truth and *Seva* is inclusiveness in spirit as the individual coalesces with the community, all of them undergird the principle of sustainability be it in the environment, development and prosperity or in lived experience. Indian scriptures such as the *Maha Upanishad*, bring the concept of interconnectedness to the fore as well as the fundamental responsibility of both the individual and society to collectively maintain the fragile ecosystem, to foster inclusivity in diversity, and to focus on holistic development which is not bounded by parochial concerns but factors in the entire cosmos.

Nature worship was and still continues to be practised, be it obeisance to the holy rivers or ritualistic engagements with agricultural cycles during festivals like *Baisakhi* and *Makar Sakranti* amongst several others, it is not unusual to find *diyas* under the *Peepal* or in front of the *Tulsi* plant, all signifying the reverence accorded to nature in India. Quintessentially hoarders, Indians were known to be mindful of waste and recycling at the ground level is still unmatched world over. Be it through *Ayurveda* or *Vastu Shastra*, or *Yoga* or eco-friendly housing, sustainability is not a conscious approach amongst Indians but resourcefulness practised across generations, with wisdom and knowledge percolating as lived realities.

However, the contradictions that are intrinsic to our economy in terms of inequity and resources, are hurtling us towards rampant abuse of what we once worshipped. Fast depleting natural resources and metastasizing pollutants threaten the precarious balance of our existence. Rapid development has overtaken our ethos by leaps and bounds. While the Government of India has initiated a multi-pronged approach to leash the damage done, through several policies and practices such as the National Action Plan on Climate Change, *Swachh Bharat Abhiyan, Pradhan Mantri Ujjwala Yojana* scheme, *Pradhan Mantri Ujjwala Yojana* scheme amongst a host of other such programmes, what is required is a concerted effort to change the mindset of the populace, particularly the urban segment. Businesses are increasingly becoming more conscious of their responsibilities to the environment and society and 'sustainable' is becoming a buzz word in tourism, fashion, and other consumer driven industries. Change is gradual and may not immediately be able to offset or mitigate the damage done already, but it has to be entrenched in our mindset and lifestyles. Education and awareness play a huge role in creating shifts of this nature and resurrecting the value systems and ethos our ancient practices and texts espoused is the way forward. The concept of *Vasudhaiva Kutumbakam* must be integrated right from early schooling to higher education, reinforcing the deep interconnectedness between one and all. Not only will this help erase the barriers that create schisms in our social fabric but nurture a healthy respect for our environment and govern our choices. The National Education Policy (NEP) 2020 has taken a step in this direction as evinced in its vision:

> The vision of the Policy is to instil among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible

> commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen. (NEP, 2020, p. 6) [ii]

It has integrated sensitivity towards the environment and enhanced awareness of sustainable development in the curricula in a phased manner from schools to HEIs. Value based education through field trips, projects and courses will augment class room transactions in the right direction. While we have a long way to go, but we are headed in the right direction and it can be hoped that the future generations don't have to pay a heavy price for our transgressions.

It has been our endeavour to publish articles which give our readers fodder for thought and research and it is gratifying for the Editorial Team of the IJSE to bring the third issue (17.3) for the year 2025 with seven research articles on topics of current interest, varying from Indian economy and polity both past and present, climate change and its impact on the world, the increasing use of AI and smart cities. In the opening article, Dr Kaushalendra Singh, seeks to examine and unfold the continued significance, relevance, and universal applicability of various doctrines of *Rāja Dharma* for any growing civilization. He concludes with pertinent observations on governance and sovereignty. In an attempt to critically examine the rationale for and feasibility of 'One Nation, One Election' model as proposed by the Government of India, Dr S. N. Dubey explores various socio-political, administrative, and other inherent behavioural challenges involved in the continuity of the existing Indian federal governance.

Looking back at our past, it is pertinent to note that nomadic communities have played a significant role in both preserving and carrying forward the ancient wisdom and traditional knowledge of India. Using both text and visual narratives, Dr Anand Saxena's paper makes a case for reciprocal relationship between nomadism and *Viksit Bharat.* A number of policy-implications have also been identified.

Dr Ritu Khanna in her article seeks to explore the opportunities and challenges that AI backed Smart Cities present as also the proactive role of the administration in maximising the potential of this technology in driving future growth. Dr Sonia Sharma explains how leading Indian companies are balancing economic growth with environmental care and the effect of the Indian regulatory framework in standardising ESG practices.

One of the greatest achievements of India, is the idea of a republican polity and Dr Prabira Sethy's paper dwells upon the various republican forms of government which

were prevalent since ancient times, throughout major part of India. It attempts to examine the pervasive nature of the *'gana-rajya'* as also highlight the factors responsible for its downfall. And Dr Riya Parashar's paper seeks to assess the specific initiatives taken to address climate change and endorse sustainable living for the people of Himachal Pradesh and evaluate how far the steps taken by the Government are in consonance with the Paris Agreement.

We hope there is something of interest for our readers and inspires further research in the areas examined. We would also like to place on record our gratitude to our esteemed reviewers for their expertise and time in assessing the papers received for publication and providing relevant suggestions to improve the quality of the papers.

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i. https://www.un.org/en/academic-impact/sustainability

ii. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Rāja Dharma in Hindu and Buddhist Political Thought

Kaushalendra Singh

Abstract

This paper examines the foundational principles of governance in Hindu and Buddhist traditions, as exemplified by *Rāja Dharma* and the doctrine of ethical kingship, which converge on shared ideals of righteousness, compassion, and service to society. In Hindu political philosophy, *Rāja Dharma* delineates the sovereign's sacred obligation to uphold justice, safeguard moral and cosmic order, and ensure the material and spiritual welfare of the populace. It envisions the ruler as both a protector and a moral exemplar, harmonising political authority with dharmic responsibility. The paper also foregrounds Buddhist political thought which conversely advances a vision of leadership grounded in selflessness, non-violence, and ethical restraint. The *Dasa Rāja-Dhamma* prescribes ten royal virtues that guide rulers in fostering harmony, equity, and collective well-being without succumbing to ego or tyranny. Both traditions advocate pluralism, tolerance, and the respectful coexistence of diverse religious and cultural identities. Though emerging from distinct metaphysical frameworks, Hindu and Buddhist models of governance offer a unified ethical paradigm that remains relevant for contemporary discourses on leadership and justice. These systems demonstrate that moral legitimacy, rather than coercive power, constitutes the true foundation of enduring and inclusive governance.

Keywords: *Rāja Dharma, Dasa Rāja-Dhamma, Ethical governance, Hindu political thought, Buddhist political philosophy, Pluralism*

Introduction

Ancient Indian political thought offers a comprehensive and philosophically rich vision of governance, in which the concept of *rāja-dharma* occupies a central place. Far exceeding administrative concerns, it embodies an ethical and spiritual responsibility, compelling the sovereign to safeguard not only the physical domain but also the moral and cosmic order. Rooted in the Vedic tradition, epics, and *Dharmaśāstras*, this concept reflects a civilization, where political legitimacy derives not from conquest or lineage, but from dharmic alignment—the universal principle that sustains righteousness and societal equilibrium (Olivelle, 2004).

The evolution of *dandanīti*—the doctrine of disciplined statecraft—complements *rāja-dharma* by supplying the coercive apparatus required for law enforcement. Yet, this force was not to be used arbitrarily; it was envisioned as a tool to uphold *dharma*, not subvert it. The king, as the bearer of *danda,* was obliged to exercise power with restraint, wisdom, and justice (Kangle, 1992). In this dual system, *dharma* provides the ethical foundation, and *danda* functions as its executive extension.

Buddhist political philosophy brought ethical kingship into sharper relief. The *Dasa Rāja-Dhamma*—ten cardinal virtues of a righteous king—outlined a governance model centred on generosity, non-violence, honesty, and self-restraint (Walshe, 2012). Here, the ruler is a *dhammiko dhammarājā*—one who leads through moral authority rather than force, seeking the well-being of his subjects as a sacred duty. The political vision of the Buddha, thus, blends pragmatism with compassion, where rulership becomes a vehicle for collective harmony and spiritual progress.

A landmark development in Indian political thought came with the *Arthaśāstra* of Kautilya, who integrated the pursuit of material prosperity (*artha*) with the principles of *dharma*. Though steeped in realpolitik, the text reiterates that effective governance must remain morally grounded. The king is not only a strategist but also a protector of the *rāstra*, tasked with harmonising administrative efficiency with ethical obligations (Kangle, 1992). The epics further illustrate these principles. Rāma, in the *Rāmāyana*, exemplifies ideal kingship grounded in justice and self-sacrifice. In contrast, the *Mahābhārata* warns of the collapse of *dharma* when rulers like Duryodhana succumb to

greed and arrogance. The *Śāntiparva* articulates an elaborate treatise on *rāja-dharma*, portraying the king as a paternal protector and upholder of justice (Brockington, 1998).

In essence, ancient Indian political philosophy conceives of the king not as an autocrat but as a dharmic steward, entrusted with ensuring cosmic balance and societal welfare. Governance, in this tradition, is inseparable from ethics and spirituality—a convergence that continues to offer profound insights into the nature of moral authority and political legitimacy.

The Meaning of *Rāja-Dharma* in Ancient Indian Political Philosophy

Within the vast and philosophically sophisticated tradition of ancient Indian political thought, *rāja-dharma* emerges as one of its most pivotal and ethically resonant concepts. It delineates the sacred responsibilities and moral obligations of the sovereign, extending far beyond the confines of legislative enforcement or administrative efficiency. Rather than a utilitarian code of kingship, *rāja-dharma* constitutes a deeply ethical and metaphysical paradigm, rooted in the universal principle of *dharma*—the moral and cosmic order that regulates both the human and the natural realms (Olivelle, 2004). Etymologically, the term symbolises a union of *rājan* (king) and *dharma* (righteousness), thereby enshrining the idea that the authority of the ruler must be bound by moral rectitude, compassion, and a steadfast commitment to justice.

The central tenet of *rāja-dharma* affirms that the monarch's foremost duty is the preservation of *lokasangraha*—the cohesion, security, and spiritual advancement of the collective. The king is not conceived as a sovereign autocrat, but as a *dharmika*—a moral executor and custodian of social order. His role is divinely sanctioned, not by virtue of lineage or conquest, but by his alignment with *dharma*. In this model, justice (*nyāya*) does not stem from personal volition but from adherence to scriptural injunctions and the ethical imperative of impartial governance. The ruler, as *dharmapāla* (protector of *dharma*), is tasked with upholding righteousness, dispensing justice without bias, and embodying *dharma* in both private conduct and public policy (Kane, 1962).

This conception vested the king with the responsibility to maintain the moral infrastructure of society by ensuring the observance of *smrti*-based injunctions.

These texts, such as the *Manusmrti*, demarcated the duties and codes of conduct appropriate to each *varna* (social class) and *āśrama* (stage of life), thus offering a prescriptive blueprint for social harmony. The ruler's mandate was not merely punitive but pedagogic. He was expected to educate and guide his subjects in the righteous path, acting as a guardian of tradition and an exemplar of moral probity (Olivelle, 2004). In this sense, judicial authority was subordinated to ethical instruction, and the application of law was to be infused with *dayā* (compassion), *buddhi* (wisdom), and *viveka* (discernment).

Significantly, *rāja-dharma* elevated the institution of kingship from political strategy to sacred vocation. A ruler was expected to embody *ksamā* (forbearance), *dāna* (generosity), *satya* (truthfulness), and *dayā* (compassion)—virtues that formed the moral foundation of good governance (Kangle, 1992). Any deviation from these principles was believed not only to lead to political unrest but to disrupt *rta*, the cosmic harmony that governed the universe. The king was thus envisioned as a microcosmic reflection of cosmic law, and his failure to abide by *dharma* risked engendering both terrestrial disorder and divine disapproval.

This understanding is richly elaborated in the *Mahābhārata*, especially through the figure of Yudhisthira. His reluctance to accept kingship after the carnage of the Kuruksetra war underscores the immense ethical burden associated with rule. Advised by Bhīsma and Vidura, Yudhisthira is reminded that *rājya* is not a matter of privilege but a moral yoke, requiring constant self-restraint and unwavering commitment to *dharma* (Brockington, 1998). The legitimacy of rulership is thus never unconditional; it is predicated on the king's capacity to act as a steward of justice and a servant of the collective good.

Therefore, *rāja-dharma* cannot be understood as a static or rigid doctrine. It is a dynamic and evolving ethical imperative that obliges the ruler to harmonise *danda* (coercive authority) with *jñāna* (spiritual wisdom). In this vision, the state becomes a moral organism whose vitality depends not on coercion or hereditary entitlement, but on the sovereign's fidelity to principles of justice, equity, and universal welfare. The ancient Indian king was not a lawgiver in the modern, secular sense; he was the human embodiment of a cosmic responsibility—to preserve order through righteousness, to serve without arrogance, and to lead with wisdom anchored in moral truth.

The Vedic Concept of *Rāja-Dharma:* Kingship and the Guardianship of *Rta*

The Vedic conception of kingship is inseparably bound to the metaphysical principle of *rta*—the cosmic order regulating truth, morality, and harmony. In early Vedic hymns, particularly in the *Rgveda* and *Atharvaveda,* the king (*rājan*) is not a mere political authority, but a sacral figure entrusted with upholding this cosmic equilibrium. His legitimacy derives not from lineage or conquest but from his alignment with *rta*, which serves as the foundation of both spiritual and political order (Jamison & Brereton, 2014).

In this worldview, the king is likened to Varuna, the celestial guardian of *rta*, whose gaze ensures adherence to moral truth. The king's earthly role mirrors Varuna's divine function—monitoring justice, performing rituals, and sustaining societal cohesion. His sovereignty is consecrated through *yajña* (sacrificial rituals), reaffirming his obligation to preserve not only legal stability but also metaphysical balance. The *Atharvaveda's* royal consecration hymns (e.g., AV 4.22; 6.87) confirm that kingship was conceived as a sacred transformation rather than a mere institutional designation (Macdonell, 1897).

The ruler, therefore, becomes the pivot between divine law and human society. His duty encompasses ritual observance, ethical conduct, and the suppression of *anrta*—falsehood and disorder. Kingship, in this sense, is a divine vocation, morally bound and ritually regulated. The Vedic texts consistently emphasise that the king's authority must be exercised with humility, vigilance, and ethical precision, lest cosmic and societal disorder ensue (Heesterman, 1985).

This model of kingship was structurally independent of hereditary entitlement. Election or birth was secondary to the sovereign's moral fitness. The king's suitability was tested against his capacity to internalise restraint (*niyama*), cultivate self-discipline, and uphold the sacrificial duties essential to maintaining *rta*. Governance, thus, was embedded in the cosmic rhythm, aligning human authority with divine will. In sum, the Vedic paradigm envisions the ruler as a moral mediator, whose primary responsibility is not dominion but the maintenance of sacred order. It lays the foundation for subsequent political theories that emphasise *dharma* as the supreme principle governing both state and cosmos.

Buddhist *Rāja-Dharma*: Ethical Governance

Buddhist political thought offers a distinctive ethical vision of rulership, grounded in compassion, wisdom, and moral restraint. The doctrine of *Dasa Rāja-Dhamma,* enunciated by the Buddha, codifies ten cardinal virtues a sovereign must cultivate to govern justly. These include generosity (*dāna*), ethical conduct (*sīla*), self-sacrifice (*pariccāga*), honesty (*ajjava*), gentleness (*maddava*), self-discipline (tapa), non-anger (*akkodha*), non-violence (*avihimsā*), patience (*khanti*), and non-opposition to justice (*avirodha*) (Walshe, 2012).

Unlike coercive models of authority, this framework defines leadership through moral legitimacy. The king becomes a *dhammiko dhammarājā*—one who rules through the power of virtue, not fear. In the *Cakkavatti-Sīhanāda Sutta* (DN 26), the Buddha proposes that societal decay stems from poverty and neglect, not inherent immorality. Rather than punishment, the king must ensure economic support, welfare measures, and equitable distribution of resources—thus linking material justice with moral regeneration.

The *Aggañña Sutta* (DN 27) reinforces this ethos by proposing an early form of social contract theory, wherein society voluntarily entrusts leadership to a virtuous individual—*Mahāsammata*—for preserving order. The legitimacy of rule, therefore, emerges from ethical competence and collective trust, not divine ordination or military might.

Buddhist political ethics extend beyond prescriptive virtues. *The Jātaka tales,* chronicling the Buddha's past lives, portray him as a compassionate ruler, sacrificing personal comfort for public welfare. These narratives emphasise that the true merit of kingship lies in humility, service, and self-governance. Furthermore, Buddhist *rāja-dharma* transcends monarchic systems. It offers a timeless paradigm of ethical leadership applicable to democratic societies, administrative institutions, and civil governance. It promotes a vision of rulership as an act of service and moral stewardship, advocating empathy over aggression, and collective harmony over authoritarian control.

The Ten Royal Virtues (*Dasa Rāja-Dhamma*) in Buddhist Political Thought

The *Dasa Rāja-Dhamma*—the tenfold royal code of virtue—stands as the

normative backbone of Buddhist political thought. Each virtue represents a facet of ethical leadership aimed at fostering social justice, non-violence, and human dignity.

1. ***Dāna* (Generosity):** Implies state-sponsored welfare. The ruler redistributes wealth, ensuring food security, healthcare, and education—thus reducing inequality and strengthening civic trust.
2. ***Sīla* (Moral Conduct):** Demands personal integrity and public accountability. It insists on right speech, honest policies, and the rejection of corruption.
3. ***Pariccāga* (Self-Sacrifice):** Refers to prioritising the public good over personal gain. The ruler leads a life of voluntary simplicity to better understand and serve the people.
4. ***Ajjava* (Honesty):** Establishes transparency and trust. It forbids deceit in governance and affirms the ruler's duty to speak and act truthfully.
5. ***Maddava* (Gentleness):** Encourages humility in power. Even punitive actions are to be carried out with compassion and understanding.
6. ***Tapa* (Self-Discipline):** Promotes restraint in personal life and moderation in state expenditure. A disciplined ruler leads by example.
7. ***Akkodha* (Non-Anger):** Urges patience and measured response to provocation. Emotional balance enhances wise decision-making.
8. ***Avihimsā* (Non-Violence):** Condemns war, repression, and cruelty. Policies should minimise suffering and resolve conflict through dialogue.
9. ***Khanti* (Patience):** Endurance in adversity fosters resilience and steady leadership. It helps preserve harmony during crises.
10. ***Avirodha* (Non-Opposition to Justice):** Calls for alignment with the moral aspirations of the people. Governance must reflect social consensus and ethical order.

These virtues are not ornamental; they shape the ethical architecture of governance. Collectively, they transform rulership from a position of dominance into one of ethical accountability and social responsibility. The sovereign, in embodying these principles, becomes a vehicle for both temporal stability and spiritual upliftment.

Rāja-Dharma in the *Rāmāyana:* A Dharmic Model of Kingship

The Rāmāyana, attributed to the sage Vālmīki, is not merely an epic narrative but a profound exposition of *rāja-dharma*. Through the figure of Śrī Rāma, the text projects an ideal of kingship rooted in moral restraint, compassion, and selfless service. Rāma is the *dharmarājā,* an archetype of the virtuous sovereign whose commitment to truth and justice supersedes personal desire or familial attachment.

The concept of *Rāma-rājya* envisions a polity in which governance is ethically guided and spiritually anchored. Rāma's conduct throughout the epic illustrates this principle. His unwavering adherence to *dharma*—whether in accepting exile, renouncing the throne, or confronting personal sorrow—serves as a lesson in sacrificial leadership. Power, in his hands, becomes an instrument of service rather than dominion.

His address to Bharata provides an extensive discourse on kingship. Rāma stresses the need for ministerial competence, reverence for elders, protection of women and vulnerable groups, and continuous ethical introspection. He warns against pride, anger, indulgence, and poor judgment—traits that corrupt rulers and destabilise the kingdom. Governance, he teaches, must be conducted with vigilance, discipline, and consultation.

The *Rāmāyana* also presents a nuanced view of statecraft. Rāma exemplifies mastery over the *pañca-durga* (fortifications), *sādgunya* (foreign policy strategies), and *sapta-anga* (seven limbs of the state), reflecting a sovereign who is not only spiritually evolved, but also strategically astute.

His rule merges the moral authority of a sage with the administrative competence of a statesman. Thus, the *Rāmāyana* articulates a kingship paradigm where the sovereign is a sacred trustee, governing through empathy, restraint, and unwavering devotion to *dharma*. The legitimacy of rule is inseparable from the ruler's ethical stature.

Rāja-Dharma in the *Mahābhārata:* Political Ethics in the *Śāntiparva*

Among ancient texts, the *Mahābhārata*—particularly the *Śāntiparva*—presents the most expansive discourse on *rāja-dharma*. In a dialogue between the mortally wounded Bhīsma and Yudhisthira, the treatise offers a holistic vision of kingship that balances spiritual aspiration with pragmatic governance.

Yudhisthira, reluctant to rule after the devastation of war, is instructed that *rāja-dharma* is the fulcrum of societal order. The threefold goals of life—*dharma, artha,* and *kāma*—are attainable only when the king discharges his duty ethically. Rulership is not a reward but a solemn moral burden, justified only when exercised in alignment with truth, compassion, and detachment (Hiltebeitel, 2001). Bhīsma equates kingship with paternal guardianship. The king must protect the people as a father protects his children. His conduct should be free from wrath, desire, and vanity. Justice must be impartial, and his life a model of self-control and moral discernment. A ruler, he insists, must first conquer the self before attempting to govern others.

The *Śāntiparva* also reinforces the strategic responsibilities of a monarch. The doctrines of *dandanīti* are essential for maintaining order, but *danda* must be tempered with wisdom. The text highlights the karmic consequences of unjust rule, portraying the sovereign not as an autonomous agent but as an instrument of *dharma* accountable to the cosmic order. This *parvan* thus enshrines a form of governance that demands both ethical elevation and political acuity. The sovereign is both a servant and a custodian of righteousness, navigating statecraft through the lens of moral obligation.

Rāja-Dharma in the Manusmrti: Sovereignty as Custodianship of *Dharma*

The *Manusmrti*, one of the most authoritative *dharmaśāstra* texts, outlines a vision of kingship in which sovereignty is subordinate to *dharma*. The king is not the source of law but its protector and enforcer, bound by a higher moral order that transcends personal will or dynastic claim (Olivelle, 2004). *Rāja-dharma* in this text is concerned primarily with the maintenance of social order, particularly the *varnāśrama-dharma*—the duties of the four social classes and four stages of life. The king's task is to ensure that each class performs its functions harmoniously, preserving the structure through education, legal regulation, and moral exhortation.

The *Manusmrti* emphasises *satya* (truth) and *ahimsā* (non-violence) as foundational virtues. The king's speech and action must be both truthful and kind. The text warns against arbitrary rule: "When punishment is inflicted after full consideration, it makes all subjects happy; but inflicted without consideration, it destroys everything" (*Manusmrti* 7.20). Central to *Manusmrti's* conception is the doctrine of *danda*—the king's authority to punish. However, *danda* is not a tool of oppression but a moral instrument to uphold justice. The text holds the king accountable for any misuse of power, asserting that unjust actions invite karmic retribution and societal decay. Even the king is subject to *danda* when he deviates from *dharma*. Thus, *Manusmrti* frames kingship as a spiritual trust. The ruler's power must be exercised with restraint, guided by wisdom and *dharma*. Justice, in this view, is the alignment of power with truth, and the king's legitimacy hinges on his fidelity to this sacred alignment.

Rāja-Dharma in Kautilya's *Arthaśāstra*: Ethics in Realpolitik

The *Arthaśāstra* of Kautilya represents the most systematic and pragmatic articulation of ancient Indian political theory. While its primary focus lies on artha—material prosperity, state consolidation, and political power—it never severs the thread that binds governance to *dharma*. Kautilya does not present a cynical or amoral doctrine of rule; rather, he constructs a deeply grounded model wherein the moral stability of the king becomes a prerequisite for political longevity and state resilience. His ideal sovereign is not a tyrant but a *rājarsi*—a philosopher-king who harmonises ethical insight with administrative expertise, balancing prudence with compassion and strategy with moral restraint (Kangle, 1992).

A core tenet of Kautilya's framework is the principle that the well-being of the king is inseparable from the well-being of his people. The king is not an end in himself but a means to *praja-sukha*—the happiness, security, and prosperity of the subjects. He asserts unequivocally: "The king's happiness lies in the happiness of his people; his welfare lies in their welfare." This ethical mandate reframes kingship as public trusteeship, demanding relentless accountability and responsive governance.

Though often perceived as a manual of realpolitik, the *Arthaśāstra* tempers every exercise of power with moral constraint. *Danda*—the sovereign instrument

of coercion—is not lauded for its severity but regulated by reason, justice, and prudential foresight. Excessive punishment or vindictive rule is seen as detrimental to both *dharma* and *rajya*. Kautilya repeatedly warns against *adharma*-driven governance, noting that rulers who deviate from righteous conduct sow the seeds of rebellion, moral decay, and divine retribution.

Moreover, the ruler must act in conformity with the *cāturvarnya* system, not to entrench inequality but to preserve social balance through functional interdependence. At the same time, Kautilya recognises the limits of autocracy, advocating council-based decision-making (*mantriparisad*), surveillance mechanisms to check corruption, and regular audits to maintain transparency. He embraces delegation of authority, local governance, and institutional frameworks that anticipate many principles now echoed in modern administrative systems.

The personal life of the king is also subject to scrutiny. Kautilya advises against indulgence in luxury, sensuality, and unnecessary display of wealth, prescribing instead a lifestyle of discipline, vigilance, and austerity. The sovereign must rise early, attend court diligently, inspect the affairs of the military, treasury, judiciary, and foreign relations, and remain constantly alert to threats both internal and external. The *Arthaśāstra* thus envisions a composite kingship, where ethical governance, strategic foresight, and public service converge. It does not dismiss the realities of political rivalry, espionage, or conflict, but insists that these must be approached with dispassion and dharmic rationality. The durability of a kingdom, according to Kautilya, lies not in coercive dominance but in the ruler's ability to uphold justice, manage prosperity wisely, and inspire moral confidence among his people.

Ultimately, the brilliance of the *Arthaśāstra* lies in its synthesis. It does not romanticise kingship, but neither does it render it soulless. It acknowledges that power is necessary, but also insists that power must be regulated by ethical constraints and guided by the overarching aim of social stability and spiritual integrity. In this way, Kautilya offers not a manual for despots, but a profound political philosophy for a sovereign who must navigate a complex world while remaining anchored in the eternal principle of *dharma*.

Conclusion: Synthesising *Dharma* and Political Authority in Ancient Indian Thought

The philosophical construct of *rāja-dharma*—as articulated in the Hindu

and Buddhist traditions—encapsulates not merely an ethical prescription for kingship but a comprehensive civilisational ethos, wherein political authority is inextricably woven into the fabric of cosmic order, moral obligation, and spiritual discipline. Both traditions, despite distinct doctrinal foundations, converge on a unifying axiom: power without virtue is not only unsustainable but illegitimate. In this worldview, governance is not a contractual mechanism or a pragmatic tool for administration, but a sacred vocation, intrinsically bound to *dharma*—the universal law that governs both personal conduct and the structural integrity of the cosmos.

In Hindu thought, particularly through the *Rgveda, Manusmrti, Mahābhārata,* and *Rāmāyana,* the king is envisioned not as a sovereign above the law but as its first subject—a moral sentinel responsible for preserving the varnāśrama order, ensuring justice through nyāya, and wielding *danda* with discernment. His authority is derived from his proximity to *dharma*, not from conquest or descent. Rulership is granted not by birthright, but by merit and ethical conduct, continuously reaffirmed through service, self-restraint, and adherence to cosmic harmony (*rta*). The king, in these texts, is both servant and protector, a bridge between the metaphysical ideal and the political realm.

Buddhist political philosophy, although emerging from a different metaphysical orientation, constructs a similarly profound ideal through the *Dasa Rāja-Dhamma*, where ethical governance supersedes hierarchical dominion. The sovereign, here, is expected to be the living embodiment of *karunā* (compassion) and *paññā* (wisdom), whose task is to reduce suffering and cultivate moral clarity among the masses. Power is seen as a moral burden, not a privilege, and its only legitimacy derives from the sovereign's capacity to act without attachment, malice, or ego. The *dhammiko dhammarājā* is not a ruler in the conventional sense, but a bodhisattva of the state, one whose policies are acts of compassion and whose leadership is a vehicle of collective liberation.

Both traditions converge on the foundational premise that *dharma*—not coercion—is the fulcrum of legitimate rule. Governance, when aligned with *dharma*, becomes an instrument of cosmic maintenance, restoring equilibrium whenever it is disturbed by greed, injustice, or ignorance. This alignment is not abstract but operationalised through ritual discipline, moral instruction, judicial fairness, and strategic governance. In this model, politics is neither

value-neutral nor autonomous; it is normatively grounded, regulated by ethical checks that transcend temporal expediency.

The *Mahābhārata* and the *Rāmāyana* embody these ideals through narrative illustration. In Yudhisthira's existential crisis over accepting kingship, or in Rāma's renunciation of personal happiness for the preservation of justice, we see that true sovereignty demands the sacrifice of self-interest in service of higher moral laws. The king's agency is never unbounded; it is always tempered by scriptural norms, spiritual humility, and public accountability.

Even in the *Arthaśāstra,* a treatise famed for its realist pragmatism, Kautilya does not abandon ethical foundations. His ideal ruler—the *rājarsi*—is one who synthesises strategic acumen with ethical restraint, wielding artha not as an end but as a means to uphold *dharma*. Statecraft is technical, but it is also teleological—oriented toward a greater moral end. In Kautilya's conception, power that is unmoored from ethics is not only corrupting but ultimately self-defeating.

What makes ancient Indian political philosophy uniquely enduring is this sacralisation of the political. Governance is not merely an exercise of sovereignty but a ritual performance, a *yajña* in which the king offers his intellect, energy, and authority for the spiritual and material upliftment of the realm. The state is not a secular institution in the modern sense but a moral organism, animated by the king's character and restrained by the mandates of *dharma*.

This vision contrasts sharply with modern political theories that often posit a separation between ethics and governance, treating the state as an impersonal apparatus for law enforcement and economic regulation. In contrast, the Hindu-Buddhist paradigm places spiritual consciousness at the core of political legitimacy, affirming that governance devoid of virtue becomes oppressive, even if efficient. The goal of leadership is not merely to rule justly but to transform society ethically, enabling each subject to progress materially, morally, and spiritually. In an age plagued by corruption, ideological polarisation, and the instrumentalisation of power, the doctrines of *rāja-dharma* offer more than historical insight—they offer a moral blueprint for our collective future. By re-centering justice, compassion, restraint, and discernment at the heart of governance, modern polities can restore both legitimacy and trust. These ancient principles do not belong to a bygone world; they are timeless imperatives for

any civilisation that seeks to harmonise power with righteousness.

In essence, *rāja-dharma* represents the highest synthesis of ethical duty, political responsibility, and spiritual realisation. It reminds us that sovereignty is not a trophy to be wielded but a sacred covenant—to be honoured through wisdom, humility, and unwavering service to the common good.

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Assessing One Nation One Election Through a Federal Lens

Shambhu Nath Dubey

Abstract

The recent endorsement by the Government of India of the High-Level Committee's recommendations, chaired by former President Shri Ram Nath Kovind, to implement synchronised elections has reignited scholarly and political discourse around the feasibility and implications of the One Nation, One Election (ONOE) model. This article undertakes a critical examination of the ONOE proposition by contextualising it within India's constitutional framework and electoral history. It explores both domestic precedents and global analogues of synchronised elections while analysing insights from various expert committees. The inquiry further delves into the practical, administrative, and normative dimensions of ONOE, interrogating whether such a model strengthens democratic efficiency or threatens the federal equilibrium that underpins India's pluralist polity. Additionally, it investigates whether ONOE can meaningfully engage with the socio-political cleavages that characterise Indian electoral behaviour—marked by regional diversity, caste affiliations, linguistic identities, and the multiplicity of party systems. In doing so, the article questions whether ONOE signifies a transformative leap toward the government's envisioned 'Amrit Kaal', or whether it portends centralisation at the cost of democratic decentralism.

Keywords: *Simultaneous Elections, Reforms, ONOE, Federal Democracy*

Introduction: Why 'Simultaneous Elections'?

India, constitutionally defined as a 'Socialist', 'Secular', and 'Democratic Republic', proudly upholds its status as the world's largest democracy. Since attaining independence on August 15, 1947, it has evolved into a constitutional federal democracy governed by a parliamentary framework. In federations like ours, where both central and state governments operate within distinct constitutional spheres, the complexities of managing frequent elections become increasingly evident. Over the years, India has grappled with the practical implications of this arrangement, as state legislative elections are often staggered and occur at irregular intervals, creating a near-continuous cycle of electoral activity while also posing other sets of inconveniences. Such conditions have fueled an ongoing debate regarding the need for comprehensive electoral reforms. Studies based on electoral reforms increasingly focus on the financial implications of frequent elections, especially the substantial costs involved in mobilizing personnel and the extended imposition of the 'Model Code of Conduct' coupled with socio-political consequences. These have spurred deeper inquiries into the viability of 'One Nation One election (ONOE)' framework. However, the implementation of such a model necessitates a careful, constitutionally sound approach without compromising the core democratic ethos.

Over time, various expert committees have examined a range of electoral reform proposals, including public financing of elections, the introduction of the right to recall elected representatives, and transitioning from the 'first-past-the-post system' to 'proportional representation'. Among these, the ONOE or 'simultaneous elections' proposition has emerged as one of the most contentious and widely debated reforms. In practical terms, 'simultaneous elections' refers to the concurrent conduct of elections across all three levels of governance-namely, the Lok Sabha (House of the People), the State Legislative Assemblies (Vidhan Sabha) and the local governing bodies that promises to entail a unified electoral process in which citizens cast their votes on the same day for all levels of representation (Debroy & Desai, 2017). To operationalize this, recently, in a notable policy advancement, the Union Cabinet, led by Honourable Prime Minister Shri Narendra Modi, accepted the recommendations of the High-Level Committee on Simultaneous Elections—chaired by former President Shri Ram Nath Kovind on September 18, 2024 (GOI, 2024). The subsequent sections of

this article will explore the evolution of 'electoral democracy' and the pressing need for envisioning ONOE and related electoral reforms.

Charting the Trajectory of Electoral Democracy in India

A historical analysis of India's electoral environment reveals that elections for the Lok Sabha and State Legislative Assemblies were initially conducted concurrently during the first two post-independence decades - specifically in 1951-1952, 1957, 1962 and 1967. The inaugural general elections, conducted from October 1951 to May 1952, followed a three-tier system involving the election of the President and Vice-President, representatives to the lower houses at both centre and state levels, and members of the Upper House. This synchronization was primarily facilitated by political hegemony of a single national party, as regional formations had not yet attained significant influence.

India's General Elections under its new constitution, held in 1951-52, marked an unparalleled democratic undertaking- rightly described as the "largest democratic experiment in human history" (Park, 1952, p. 1). Approximately, 4500 seats across the Parliament and State Assemblies were contested concurrently. An estimated 700 million ballot papers were printed, and 224, 000 polling stations were established, equipped with over two million metal ballot boxes. The elections required around 56, 000 presiding officers, supported by '280,000 clerks and 224,000 law enforcement personnel (Park, 1952). Nearly two million individuals were engaged in facilitating the electoral process, either as officials or political operatives with the financial outlay (in terms of total expenditure) surpassing Rs 10 Crores (Express, 2023). Despite significant socio-administrative challenges ranging from widespread illiteracy to logistical concerns involving migrant over voter registration, the Indian state effectively managed to uphold electoral integrity. However, many disruptions followed in the synchronized electoral cycles with the extensive use of Article 356 of the Constitution topping the list of reasons. In this regard, the ECI convened a conference of all India Parties in New Delhi on November 13, 1956 (ECI, 1957). Simultaneous elections were widely viewed as operationally efficient, benefiting both voters and electoral administrators, while also providing strategic advantages to political parties and candidates.

Proceeding towards the gamut of electoral democratic exercise, the Government of India conducted the second national elections from February 24 to March 14, 1957. Approximately, 115 million voters, representing nearly 60% of the eligible electorate of 193 million and more than 50 political parties, alongside numerous independent candidates, contested the elections (Roach, 1957). With approximately 2,00,000 polling stations set up, the results were declared by April 1 (Roach, 1957). The electoral process saw the ballot boxes, and the implementation of indelible ink for voter authentication, alongside other processes involved in the making of the electoral history. Furthermore, the third general elections witnessed participation from approximately 114 million voters (Weiner, 1962). The electoral machinery had now matured, reflecting greater operational efficiency and electoral literacy among the populace.

The fourth general elections marked a turning point in India's political history, signaling a substantial shift in the nation's electoral landscape. The Congress' representation in the Lok Sabha dropped significantly—from 73.1% to 54.6%—resulting in the loss of 81 seats. Meanwhile, opposition parties like the Swatantra Party and the Jana Sangh gained momentum, increasing their seats from 18 and 12 in 1962 to 44 and 35 respectively, accompanied by modest improvements in their vote shares (ECI, 1968). The election marked a significant rise in anti-Congress political sentiment and witnessed the consolidation of coalition-based politics at both the state and national levels.

A comprehensive analysis between 1962 and 1967 elections reveals significant voter realignment. While some voters demonstrated continued allegiance to the Congress, many defected to opposing parties. As Morris-Jones (1967) noted, the Congress's political monolith had been significantly fractured. The dominance of a single party was no longer an accurate portrayal of India's political structure. However, this did not culminate in a stabilized multi-party system and electoral base; instead, it fostered a fluid cross-party polity marked by uncertainty and complexity. Although Congress remained the most influential party, its seat losses at both national and state levels outpaced the decline in vote share. Commenting on the 1967 election, Da Costa observed:

> The Indian Electorate long believed to be passive and resistant to change, now displays clear signs of political transformation. Youth, the less educated, illiterate masses, marginalised communities, and especially those in the lowest

> brackets are reshaping traditional loyalties. while candidates perceive this as a contest for power, for political analysts it marks a historic rupture from the past. (1971, p. 171)

In the years that followed, the pattern of synchronised elections in India gradually unraveled. This disruption began with the early dissolution of several state legislative assemblies in 1968 and 1969, followed by the premature termination of the fourth Lok Sabha in 1970, which led to fresh elections in 1971. The fifth Lok Sabha's tenure was unusually extended until 1977 under the Emergency provisions. Although some Lok Sabhas, like the eighth, fourteenth, and fifteenth, completed full five-year terms, others—such as the sixth, seventh, ninth, eleventh, twelfth, and thirteenth—were dissolved early. Similar inconsistencies were observed in the functioning of State Assemblies across the nation.

India's political landscape also underwent a metamorphosis with the proliferation of regional parties, which emerged as powerful stakeholders in their respective states. Today, electoral activity is a perpetual phenomenon, with some part of the country always in campaign mode. This staggered election cycle imposes significant burdens in terms of time, resources and administrative strain on voters, political parties and electoral institutions alike. The continuous state of electoral mobilisation reinforces the argument for restoring a framework of simultaneous elections to counteract the inefficiencies and fragmentation of the current system.

The Proposal of 'One Nation One Election' (ONOE)

The proposition of ONOE has emerged as a recurrent theme in the Indian constitutional and administrative discourse, envisioned as a transformative reform to enhance the efficacy and coherence of the country's democratic processes. This model, as stated earlier, seeks to align elections for the Lok Sabha, State Legislative Assemblies and local self-governments within a unified timeframe, thereby addressing issues of policy disruption, administrative fatigue, and escalating election-related expenditure. Over the decades various expert bodies, commissions and scholars have reiterated the need for synchronizing the electoral calendar to strengthen the governance architecture.

With reference to the same, the ECI in its First Annual Report (1983) strongly

advocated for restoring the practice of simultaneous elections, which was followed up during the initial decades of our political milieu post-independence - specifically in 1951-52, 1957, 1962 and 1967. The Commission listed seven compelling reasons to justify this move, the most prominent being the need to deduct the humungous fiscal and logistical burden incurred through staggered elections. Additionally, the Commission highlighted that preparing rolls multiple times for separate elections results in duplicative effort and cost. Furthermore, it stated that elections necessitate the deployment of millions of civil servants and security forces, disrupting their core responsibilities for extended periods. Another major dilemma identified was the excessive use of money in elections, particularly in repetitive campaign cycles (ECI, 1984).

A noteworthy recommendation by the National Commission to Review the Working of the Constitution (NCRWC) (2002), chaired by Justice M.N. Venkatachaliah, in its 2002 report, underscored the detrimental effects of disjointed elections and frequent implementation of the Model Mode of Conduct on policy continuity and developmental planning. This observation aptly aligns with the broader concern expressed by Upendra Baxi who cautions that reforms in electoral scheduling run together with the principles of constitutional morality. To argue further, the dialectic between constitutional morality and public morality serves well the promotion of constitutional good governance and the production of constitutionally sincere citizens (Baxi, 2020). Baxi's argument, of course, does not explicitly focus on implementing ONOE but certainly reinforces the need for a balanced approach to electoral reform.

Likewise observations from the Law Commission of India (2018), under the leadership of Justice B.S. Chauhan in its 180th draft report supported the idea of simultaneous elections on the grounds of the report stated above - conserving public funds, minimizing administrative fatigue and pressure on security personnel, facilitating policy consistency and processes to developmental activities rather than endless electoral engagements (GOI, 2018). The Commission clarified that implementing such a model would require certain procedural overhaul, such as amendments particularly of Article 83 and 172 of the Indian Constitution, along with changes to the Representation of the People Act, 1951, and the Rules of Procedure of both Parliament and State Legislatures.

Recently the government of India constituted a high-level committee under Shri Ram Nath Kovind (2023-24), the former President of India, to examine the legal feasibility and structural implications of implementing ONOE. The Committee's report remarked that frequent elections create a climate of political uncertainty, hinder long-term investment and disrupt governance cycles. Contrastingly, synchronised elections, it argued, would ensure stability, predictability in policy execution, enhanced voter participation and optimal public expenditure (GOI, 2024). The committee proposed a one-time dissolution of all State Assemblies and local bodies during the next general election followed by synchronised elections within a 100-day framework. It also recommended constitutional amendments, including the "introduction of Article 324A proposing to bring local body elections under the purview of synchronisation, subject to state ratification" (GOI, 2024). Furthermore, the committee proposed a unified electoral roll, with the ECI designated as the central authority, to reduce redundancy and enhance electoral transparency.

In this context, one is reminded of Subhash C. Kashyap's observation that "Synchronisation is not centralisation. It is coordination for coherence—a necessary reform in a democracy as large and complex as India" (2011, p. 23). Kashyap's remark underscores a critical distinction: the ONOE proposal should not be viewed through the lens of authoritarian consolidation, but rather as a pragmatic reform aimed at streamlining electoral processes while preserving democratic plurality. Drawing from this perspective, several committees over the decades have proposed synchronising elections to mitigate electoral fatigue, curb excessive expenditure, and enhance policy continuity. These recommendations further reflect a growing consensus that electoral reforms must evolve in tandem with India's socio-political and economic transformations.

Can ONOE be Really Advantageous?

A primary rationale of ONOE is to mitigate governance disability by the reducing the frequent imposition of the MCC. Empirical data from the ECI reveal that between 2019 and 2024, the MCC was active for a total of 676 days. This implies roughly 113 days annually where policy and development initiatives are paused (ECI, 2024). In 2024 general elections, the MCC remained in force for 82 days, temporarily freezing development projects, welfare initiatives and appointments (Al Jazeera, 2024). Governments are barred from launching new

schemes or announcing major policy decisions during this period, which affects both the efficiency and continuity of governance. When multiple states hold staggered elections, these disruptions become recurring, leading to prolonged periods of administrative standstill.

Table 1

Data on MCC for recently conducted elections

Enforcement of Model Code of Conduct Each Year in India							
2019		2022		2023		2024	
Jharkhand	50 days	Goa	51 Days	Meghalaya	43 days	Andhra Pradesh	82 days
Haryana	30 days	Manipur		Nagaland		Arunachal Pradesh	
Andhra Pradesh	71 days	Punjab		Tripura		Odisha	
Arunachal Pradesh		Uttarakhand		Chattisgarh		Sikkim	
Odisha		Uttar Pradesh		Madhya Pradesh	54 days	Jammu & Kashmir	52 days
Sikkim		Gujrat	36 days	Mizoram		Haryana	
		Himachal Pradesh	62 days	Rajasthan Telangana			
Total	150 days	Total	149 days	Total	97 days	Total	134 days

Source: Data compiled from Election Commission of India (2019a, 2019b, 2022a, 2022b, 2023a, 2023b, 2023c, 2024)

It is also noteworthy to add here that elections in India are not only operationally complex but also financially intensive. The cumulative expenditure borne by GOI, state governments and contenting political parties is massive. While the state bears the official cost of managing elections- deployment of forces, polling infrastructure and logistics- the candidates and parties incur significant

campaign expenditures. As per Rule 90 of the Conduct of Election Rules (ECI, 2022), the spending limit for candidates contesting parliament elections in large states is capped at Rs 95 lakhs, for assembly elections at 40 lakhs. However, these are often breached in practice. The unregulated expenditure by political parties and the resort to off-the-books funding channels contribute to the proliferation of black money in Indian elections, a phenomenon acknowledged by scholars like Vaishnav (2017), who links rising electoral costs with corruption and clientelism.

The cost of elections has seen an exponential surge. The first general elections in 1951-52 cost the exchequer Rs 1.05 crore. By contrast, the 2019 Lok Sabha elections cost an estimated Rs 50,000 crore as per the Centre for Media Studies (Business Standard, 2024). While projections had earlier suggested that the 2024 elections might touch 1 lakh crore, the actual expenditure is estimated to have far exceeded this mark, highlighting the unsustainable nature of the current electoral cycle (Business Standard, 2024). Clearly, simultaneous elections would not only rationalise resources but could also improve transparency and reduce the scope for unethical financial practices.

Table 2

Expected Election Expenditure Over the Decades

Election Year	Type	Cost (Approx.)
1951-2	Lok Sabha	Rs 10.5 Cr
2009	Lok Sabha	Rs 1,100 Cr
2014	Lok Sabha	Rs 3,870 Cr
2019	Lok Sabha	Rs 50,000 Cr
2024	Lok Sabha	Rs 1,00,000 Cr

Source: Data compiled from NDTV (2019), Indian Express (2023) & Business Standard (2024)

Scholars argue conducting simultaneous elections can invigorate democratic participation. Repeated elections in different states throughout the year often lead to “voter fatigue”, resulting in declining turnout especially in urban and migrant populations (Yadav, 1996). Consolidating election cycles can create a unified electoral event, thereby encouraging higher voter turnout. The NITI

Ayog, in its discussion paper (2017), pointed out that simultaneous elections could serve as a corrective mechanism to enhance voter engagement and reduce electoral apathy. Voting for both national and state-level representatives on the same day simplifies the process, reduces voter burden and streamline civic engagement.

Another persuasive argument in favour of ONOE is the reduction in governance disruption caused by the persistent election cycle. Political leadership, bureaucratic machinery and administrative resources are routinely diverted to election campaigning and logistical arrangements, detracting from developmental activities. According to Dr. S. Y. Quraishi, former Chief Election Commissioner, "the country is perpetually in election mode" (2019, p. 24), which severely undermines good governance and strategic long-term policy implementation. A synchronized electoral calendar as proposed by multiple commissions and scholars, may thus realign electoral politics with the principles of stable and accountable governance.

Discussing Federal Implications

The notion of synchronising national and state elections in India introduces a serious constitutional dilemma concerning the structure of Indian federalism. By compressing the temporal gap between national and regional polls, ONOE potentially fosters a drift towards a unitary form of governance, as it compromises the operational and ideological autonomy of state governments (Aiyar, 2023). Non-simultaneous elections offer voters the cognitive and temporal space to weigh national and regional issue independently. This reinforces the essence of electoral democracy by allowing distinct mandates at each level, a view supported by democratic theorists like Arora and Kailash (2018) who argue that staggered elections reflect India's "competitive federalism". These intervals provide space for parties and voters to focus on context-specific concerns, avoiding the subsumption of regional interests under the national agenda. Moreover, as Yadav (1996) describes in his analysis of "holding -together federalism", India's federal structure thrives not despite its diversity, but because it accommodates and manages competing identities through separate electoral arenas.

Critics of ONOE also caution that it could severely weaken these decentralized dynamics. As Tillin (2016) warns, simultaneous elections may incentivise national parties to dominate state elections by blurring issue boundaries,

thereby homogenising political discourse. The result could be a decline in the salience of regional concerns, leading to erosion of local accountability and diversity in representation. This tendency toward centralisation poses a risk to the multi-level governance system that India has patiently nurtured over decades (Palshikar, 2020). Evidence from post-1999 electoral data supports these fears. In states like Arunachal Pradesh, Maharashtra, Andhra Pradesh, Sikkim, Karnataka and Odisha where elections coincided with Lok Sabha polls, voter behaviour tended to favour the same party at both levels, reflecting what political scientists describe as the "coattail effect" (Chakravarty, 2016). Originally identified by Campbell (1960) in the American context, this effect occurs when a popular national figure sways outcomes for down-ballot candidates from the same party. In India, this reduces the likelihood of differentiated electoral outcomes and consolidates power vertically in favor of national parties.

Historical precedents from India's early post-independence decades, when simultaneous elections were the norm, further validate this concern. During that period, national parties enjoyed a pronounced advantage in both state and national polls, reinforcing central authority (Kumar, 2021). While this may have contributed to short-term political stability, it also restricted the evolution of regional autonomy and local political agency, both of which are essential for sustaining a vibrant federal system in a deeply diverse society.

Thus, the ONOE proposal cannot be viewed merely as a technocratic or economic reform. Rather, it poses a fundamental question about the kind of polity India aspires to be. As Tillin insightfully observes, ONOE is designed "to centralize political life [and] reverse the trend of the last several decades which saw state politics as the preeminent arena of Indian politics" (2016, p. 16). If implemented without adequate safeguards for federal autonomy, ONOE may compromise the very essence of Indian democracy: its ability to accommodate and empower a plurality of voices across diverse regional landscapes.

Conclusion:

In summation, the proposal for One Nation, One Election (ONOE) remains at a nascent stage of discourse and policy formulation. While it promises potential advantages in terms of administrative efficiency, cost rationalisation, and governance continuity, its broader constitutional, federal, and socio-political implications are yet to fully unfold. From a societal perspective, the effects of

ONOE are equally complex. Proponents claim that synchronisation may reduce voter fatigue, increase participation, and improve electoral efficiency (ECI, 1962; ECI, 1968). On the other hand, political behaviour in India has historically reflected a distinction between national and state-level voting patterns, with voters often making nuanced choices in each domain (ECI, 1957; ECI, 1953). A simultaneous format could blur these distinctions, potentially reducing the representational diversity of Indian democracy.

ONOE gains additional significance when positioned within the context of 'Amrit Kaal'. To maintain efficiency and stability during a time of transition, the government portrays it as a component of a broader institutional reform agenda (PIB, 2019). The plan is in line with the desire for continuous governance in the service of long-term national objectives. However, by concentrating political power and discourse at the Centre, it may run counter to 'Amrit Kaal's' inclusive and pluralistic ethos if pursued without sufficient safeguards. A balanced perspective therefore suggests that the debate should not be framed as a binary of acceptance or rejection. Instead, the possibilities such as phased synchronization, where groups of state align, could be explored.

In conclusion, ONOE embodies both opportunity and risk. The vision of facilitating the government's aspirational 'Amrit Kaal' through synchronised elections must be weighed against the concerns of federal imbalance and democratic centralisation voiced by critics. As the policy architecture is still in development, it would be premature to arrive at definitive conclusions. Electoral reforms of such magnitude demand cautious deliberation, informed debate, and rigorous constitutional scrutiny. Only time, and empirical evaluation, will determine whether ONOE will emerge as a transformative stride in India's democratic journey or pose unforeseen challenges to its federal ethos.

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Sustainable Commerce and Viksit Bharat: Learnings from Nomadism

Anand Saxena

Abstract

The research question the paper addresses is: could a rear view into India's nomadic economy of the past have implications for the articulation and realisation of the vision of India's future, Vision Viksit Bharat (VVB) via sustainable commerce? The research question assumes inevitability as reference to, if not reliance upon, ancient wisdom and traditional knowledge (AWTK) as integral to addressing contemporary issues. In this context, even its flip version, would there be a place for nomadic communities - of pastoralists, hunter-gatherers and peripatetic groups - in Viksit Bharat is an equally pertinent question. The paper delves into the learnings from the nomadic commerce and economics of the past to understand potential connections with our common future. In a broader context, the paper explores the resurgence of interest in the social, environmental, and economic aspects of nomadism, as evident in initiatives such as the World Initiative for Sustainable Pastoralism (WISP). The paper vehemently makes a case for active protection of nomadism wherever it exists and also focuses on discerning and extending the economic and environmental contributions of nomadism of the past for an economy, polity and society of the future. In the process, the paper identifies several linkages and pathways to leveraging nomadic wisdom of the past for India's future as reflected in the Vision Viksit Bharat.

Keywords: *Nomadism, Sustainable Commerce, Sustainable Development, Vision Viksit Bharat*

Introduction

Commerce, in the sense of international and domestic trade as well as services auxiliary thereto provides momentum and scale to an economy. The ratio of trade to the gross domestic product (GDP) provides a measure of its significance. The global trade-to-GDP ratio was nearly 30% in 2013 implying that a third of the world's economy was accounted for by commerce (WTO Secretariat, 2024). It was 45.92 % for India (World Bank, 2025), implying an even more significant role it has in India's economy. Given the significant role it plays in India's domestic economy and that of the world, it is not difficult to envisage that socially and environmentally sustainable commerce can significantly impact sustainable development of the national as well as world economy.

Vision Viksit Bharat (VVB) may be translated in English as the 'Vision of India' as a developed country and is said to be ipso facto a road map for sustainable development in India (Ishwar Dan, 2024). The vision, inter alia, seeks to rely, besides modern approaches to development, on ancient wisdom and traditional knowledge as well. It thus warrants a reflection on the nomadic past, the precolonial medieval and ancient practices of nomadic communities with a view to discerning ways to sustainability.

Objectives of the Study

The purpose of the paper is to reflect upon the relationship between nomadism i.e. communities of herders, hunters, gatherers and sustainable development over time and space. The specific objectives of the paper are enunciated as follows.

- To reminisce one's first academic encounter with the nomadic pastors and to reflect upon the significance of that learning in the wake of the challenges to sustainable development today.
- To examine how the successive institutional changes favouring the sedentarisation of nomadism impacted the nomadic communities and the larger canvas of development. The coping strategies these communities adopted despite severe constraints and pressures of the changing times.
- To discern the pathways to supporting and sustaining nomadism wherever it persists and to transfer knowledge and wisdom with the

nomadic tribes for our collective futures. In particular, to explore and foster supply chain linkages drawing on nomadic capabilities and resources.

Impetus for and Rationale of the Study

The immediate impetus for the study came from the livelihood crisis facing Himachal's Gaddi nomads pursuant to the US's imposition of a tariff of 26 per cent on import of organic wool from India (Mohan, 2025). A paradoxical situation wherein, on the one hand, humanity needs to reclaim an organic, circular, eco-friendly and socially sustainable world, ways of life and our common future and on the other, institutional arrangements seem to defy rather than support such endeavours. A pressing need was felt to reflect upon the temporality and spatiality of the contribution of nomadism to the national world economy and the institutional mechanisms that support and sustain it.

The second compelling reason for envisaging this paper came from the growing recognition of the fact that the ancient wisdom of experiential learning, profound insights, and symbiotic relationships with local environments of the indigenous people can play a significant role in the fostering sustainable development (Indigenous Knowledge, n.d.). It has been argued that the tacit intellectual knowledge of indigenous people can be a tremendous source of innovation for sustainable development (Meyer & Naicker, 2023). The author has for quite some time contemplated on the learnings that can be drawn from the lives of the nomadic pastors. Living in Delhi (India) amidst perilous quality of air attributable to the burning of stubbles in the neighbouring states of Haryana and Punjab one is compelled to reflect upon the environmental perils of institutional setbacks to nomadic pastoralism. One may recall that the cattle of the nomadic pastors would feed on stubbles in the field, enrich the soil through biomass and earn in kind and cash for them. The Indian nomadic communities linked well through the trade routes and thus were a source of prosperity for India. The third compelling reason is the need to celebrate the resilience of those nomads who sustained the onslaught of colonialism, capitalism and corporatisation of the economies and societies. It is a serious ethical issue that they were pushed into marginalisation, vulnerability and relegation in history. While, the colonial powers held them as criminals, the present-day sovereign states are no better as they view them as a threat to stability & peace.

Did they lag in our flawed understanding of development? Or are they, as have been, the likely paragons of sustainability? Further, as the growing urbanisation - another flawed indicator of 'development'- continues to encroach upon common and community owned resources it has no be noted that we must rethink, reimagine, restructure and re-engineer and reform the institutions that acknowledge, appreciate and affirm not only their survival but also leverage their knowledge for our future. There definitely is a case for revival of interest in nomadism.

Method

This paper is based on qualitative research and draws on secondary and tertiary data, historical and ethnographic in nature. It comprises both text and visual narratives. These narratives provide insights into the prevalent context of nomadism as well as the institutional changes disrupting the nomadic life.

Academic Encounters on Nomadism

The first encounter on nomadism is referenced in a chapter on nomadic pastors in the NCERT textbook of Class IX History with his daughter (NCERT, 2006). The chapter notes at the outset that the nomads rarely enter the history books used for teaching in schools. Much of the works in history and economics focus on agriculture, industry in human settlements, rather than this wandering community. Nomadic pastors are a large and significant yet neglected minority globally as well as in the national economies despite their economic and environmental importance. Chapter V of the above-mentioned book traverses the Indian nomadic communities of the mountains as well as the plains, plateaus and deserts.

In the mountains, the seasonal cyclical movement of the nomadic tribes of Gujjar Bakkarwals of Jammu & Kashmir and of Gaddis of Himachal Pradesh comprises movement to the foothills during the winters and return to the higher altitudes with the onset of summers. Summer is the shearing time for sheep and reaping the precious organic wool (Figure 1). The annual export of approximately 2.5 lakh kg of raw organic wool to the US provided a decent and dignified livelihood to these nomadic communities. Just a stroke of pen by the current dispensation in the US, escalating the tariffs has led to hardships for these communities (Mohan, 2025).

In an illustrative account of the nomads from the plateau region of Konkan (Maharashtra & Goa) and Banjaras of the North (Rajasthan, Uttar Pradesh, Punjab and Haryana), the chapter explains how these communities would alternate from cultivation, crafts, etc. and pastoralism in sync with the cycle of nature. It is significant to note that their cattle earlier fed on the stubble, whose burning lately has increasingly become a major cause of air pollution (Figure-2). Thus, they formed bonds with the settled farmers of their respective regions who paid them in cash and kind (rice and other crops).

Figure 1

Waiting for Shearing to Begin - Gaddis of Himachal Pradesh

Source: NCERT, 2006

Figure 2

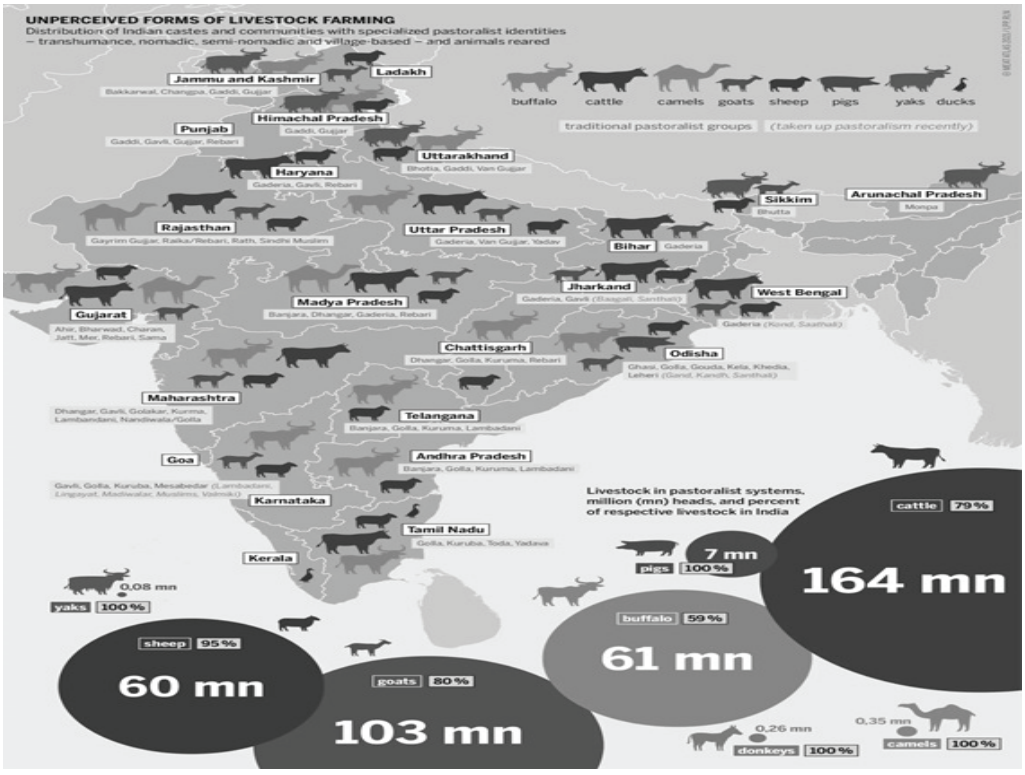
Cattles Feeding on the Stubble and Manuring the Fields in Konkan Region

Source: Chakraborty, 2023

The nomadic movement synchronised with the cycles of nature implies a fluid, variable and beautiful temporal rhythm of life at the confluence of environment (Maru, 2024). The pastors made good use of wastelands - referred to as the museums of hardships- as their activity ensured fodder and fuel for their livestock and their own sustenance. Over 70 per cent of India's livestock are kept in an extensive agro-pastoral system and thus account for a significant proportion of red (meat and meat products) and white (Milk and milk products) grocery for domestic and export consumption as can be evinced in Figure 3 given below (Rollefson & Kishore, 2021).

Figure 3

India's Livestock in Pastoralist System



Source: Rollefson & Kishore, 2021

In this paper, the discussion has been limited to the pastoralists of India whereas the nomadic communities here comprise two other equally significant categories viz. hunter-gatherers and peripatetic nomads as well (Berland & Rao, 2004). Even their contribution to the development and glory of India cannot be undermined. For example, the hunter-gatherers played an important role in the evolution of ancient healing practices and Ayurveda (Elendu, 2024) and the thriving economy of the forest produce (Nagraj, 2021). Culturally, it has been argued that nomadic communities of the mountains and forests played an important role in the shaping of Indian culture (Chandrakanth, 2022). Likewise, the Waghris, the peripatetic community of Gujarat continues to play

a critical role in the cloth recycling even till date (Bapat, 2024) and the Gadiya Lohar (nomadic ironsmiths) specialised in metallurgy. See Figures 4a, b & c.

Figure 4a`

Hunter-gatherer Tribal Women of Chhattisgarh Sorting the Forest Produce

Source: Nagraj, 2021

Figure 4b

A Woman of the Waghri Community of Gujarat Exchanging Clothes

Source: NDTV, 2023

Figure 4c

Rajasthan's Gadiya Lohar (Nomadic Ironsmiths)

Source: ETV, 2022

It would be fair to interpretively extrapolate that in their movements, nomads picked up the crafts, crops and cultural artefacts for direct trading not only through the nooks and corners of the country but also building contacts with the merchants for overseas trade. While it would be a cliché to say that before humans settled, they were all nomads, yet several Indian business communities of the date have a nomadic lineage. Despite their significant contributions in the past and linkages with the present, all the nomadic communities are discriminated against, looked at with suspicion by the sedentary population and have thus been substantively marginalised (Pant, 2004). It would be pertinent here to examine the institutional changes impinging upon the fate and the future of nomadism in India.

Institutional Change and Nomadism

Modernity, with its attendant capitalism, colonialism and corporatisation, can be said to be the major institutional change that impacted nomadism nearly everywhere. The advent of sedentarism as the mainstay of urbanisation,

civilisation and economic development created prejudice against nomadism. Institutional theory provides a robust framework for understanding the relegation and pathways to the revival of nomadism. Institutions are embedded in both formal and informal aspects of governance. Institutions are formal and informal rules of the game (North, 1990). The formal rules are inherent in laws and regulations; the informal rules vest in societal norms and beliefs, customs and traditions. These aspects and discontinuities and structural breaks therein significantly provide a constellation of circumstances that can impact the fortunes of the individuals and the collectives. In this section, an instance or two from each of the two types of institutional change impacting nomadism are highlighted below.

Formal Institutions: Colonialism

Colonialism was perhaps the most disruptive phase in the lives of indigenous people anywhere. In India, the colonial role drastically impacted the lives of pastoralists. Grazing lands had to give in to commercial agriculture and forest areas were declared as "reserved" resources. Their movements were suspected by the rulers and, the revenue (grazing tax) they had to pay to the rulers were increased (NCERT, 2006). Their dignity was ruthlessly compromised with the enactment of the Criminal Tribes Act (CTA) in 1871, notifying nearly 200 nomadic communities as criminals. Colonialism, thus, meant persecution, disenfranchisement and sustained marginalisation of the nomadic communities of India.

Following Independence in 1947 and adoption of the constitution in 1950, some nomadic and de-notified communities were included in the constitutional categories of disadvantaged people of India (Rahul, 2023), viz. Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Castes (OBCs). Whether these measures have been able to bring about the mainstreaming, inclusion and economic emancipation of the nomadic people of India is a subject that is beyond the scope of this paper.

International Institutional Context

Nomadism has attracted the attention of international institutions too. For example, International Union for Environment Conservation (IUCN) studied the total economic value attributable to nomadic pastoralism as comprising not

only direct benefits such as milk, meat, wool, hides & skins but also deeper indirect benefits, such as environmental services that help conserve species and contribute to tourism (Helen, 2008). As an international research and advocacy organisation the IUCN has undertaken several initiatives in support of nomadism such as the World Initiative for Sustainable Pastoralism (WISP). United Nations' Declaration of the Rights of the Indigenous People (UN, 2007) bestows upon the nomadic communities a host of rights including the right not to be subjected to forced assimilation or destruction of their culture [Article 8.1], right not to be evicted from their lands [Article 10] and the right to revitalise, use, develop and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures, and to designate and retain their own names for communities, places and persons [Article 13].

Informal Institutions: Social Norms and Beliefs

Social norms and beliefs associated with nomadism have also undergone a kind of metamorphosis. For example, a society that was once welcoming of peripatetic nomadic communities of street performers or majma artists has now become a gated community where there is no place for the nomads in the practice of a living culture (Figure 5).

Figure 5

Informal Institutions and the Endangering of Peripatetic Nomadic communities of Street performer

Source: As mentioned

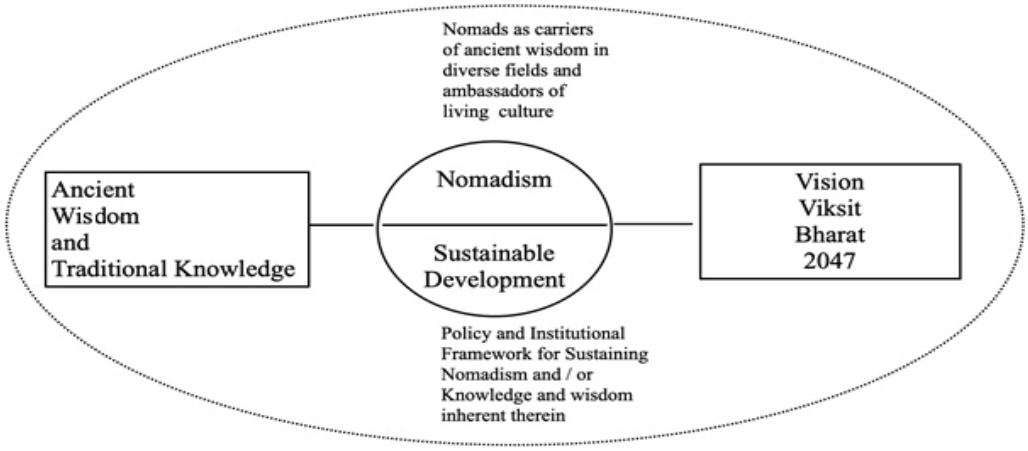
The Vision Viksit Bharat (VVB @ 2047) seeks to accord simultaneous importance to the idea of *virasat* & *vikas*, implying a symbiotic relationship between the need to preserve and learn from the heritage as well as to adopt a progressive and outlook toward the future. While the vision does not make this emphasis explicit, an emphasis on poverty reduction as a pillar of the VVB @2047 and emphasis on the ideas such as *virasat aiwam vikas* (heritage & development), *sabka saath sabka vikas* (participative governance for social inclusion) suggests that the welfare of nomadic pastors, forest dwellers and peripatetic nomads has not got omitted from state prioritisation for the realisation of the VVB@2047. Announcement of the welfare schemes such as the 'Mechanism for Marketing of Minor Forest Produce (MFP) through Minimum Support Price (MSP) and Development of Value Chain of MFP' augur well for the hunter-gatherer communities of India (TRIFED, 2020).

Integrative Framework

Any search for a solution to the problems of sustainability- be it poverty & inequality, conflict & peace or be it climate change can immensely benefit from non-dualistic and mutually reinforcing insights from ancient wisdom as well as modern knowledge systems. Nomads have the performance and potential to provide a seamless continuity of the past-the present- and the future (Figure 6).

Figure 6

An Integrative Framework for Sustainable Commerce for Viksit Bharat



Conclusion and Policy Implications

In this paper an attempt was made to reminisce one's academic encounters with nomadism and time regress the institutional changes impinging upon it. It was noted that the role of nomadic communities in India's development in the past has been significant and their sedentarisation by the colonial rulers posed an existential crisis for them. The compulsion of sustainable development has renewed interest in their indigenous ingenuity and a lifestyle in sync with the rhythm of nature. The paper has highlighted the role of formal and informal institutions in sustaining nomadism. It is encouraging to note that the VVB@2047 is not oblivious of this imperative, albeit even if not explicitly stated. The paper recommends that support to the nomadism be a matter of rights to these communities and enjoin upon the governments a directive principle of state policy to this effect. Some of the recommendations in this regard could be as follows.

- Enunciation and Designation of Nomadic Communities as the Ambassadors of Living Culture of India. Issue of Special Identity Cards with India as their residential address. This should facilitate their unrestricted movement, entry and stay throughout the country. This identity card should be valid for all 'Know Your Customer - KYC' verifications and for availing of state subsidies, medical facilities and other welfare schemes.
- An institutional mechanism for researching, documenting and preserving the tacit knowledge of these communities and the means for harnessing it for the resolution of the problems of modernity.
- Extension of policy support, including minimum support price to all the forest produce gathered by these communities.
- Inclusion of support to the nomadic communities in Schedule VII of the Indian Companies Act, 2013 for facilitating flow of corporate social responsibility (CSR) funds for furthering their interests.
- An institutional mechanism for upskilling of the nomadic tribe craft artists and introduction of tribal and nomadic art forms in the art and design schools of India.

- Free access to all the performance areas and venues, theatres etc. for street artists, puppeteers etc. Institutional mechanism for their ticketed performances.
- Recourse to sedentarism must be a matter of choice for them rather than imposed compulsion.

A concerted action of the state, market and society may result in the emancipation of nomadism and the very idea of sustainable development.

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AI: The Brain-Powering Smart Cities

Ritu Khanna

Abstract

Artificial Intelligence (AI) describes systems that can replicate human thought processes, including learning, reasoning, and making decisions. These abilities are driven by sophisticated algorithms, data analysis, and the recognition of patterns. The development of AI has been sometimes compared to the invention of electricity since it has as diverse applications as the usage of electricity. It can be used across multiple sectors of the economy including agriculture, healthcare, manufacturing, urban transport, disaster management, education, policy making, cyber-security, governance, energy solutions, and supply chain management. Artificial intelligence enhances predictive analytics, enabling improved planning and immediate interaction with citizens, contributing to more inclusive governance. It can also boost the operational efficiency of managing large systems. In India, the AI-enabled digital public-infrastructure platforms like Aadhaar, Digiyatra, UPI, and DigiLocker have revolutionised governance. This paper explores the various initiatives adopted by the state governments in India to use AI technology to develop and transform Indian cities into smart cities. The paper also seeks to examine the opportunities that AI offers as well as the challenges that the governments must address for successful integration of AI into the designing of these cities. The government needs to play the balancing act between innovation and ethical concerns.

Keywords: *Artificial intelligence, Smart cities index, Smart cities mission, Technology, Data security, Ethics*

Introduction

Artificial Intelligence (AI) describes systems that can replicate human thought processes, including learning, reasoning, and making decisions. These abilities are driven by sophisticated algorithms, data analysis, and the recognition of patterns. The development of AI has been sometimes compared to the invention of electricity since it has as diverse applications as the usage of electricity. It can be used across multiple sectors of the economy including agriculture, healthcare, manufacturing, urban transport, disaster management, education, policy making, cyber-security, governance, energy solutions, and supply chain management (Karger et al., 2025, Gracias et al., 2023). Artificial intelligence enhances predictive analytics, enabling improved planning and immediate interaction with citizens, contributing to more inclusive governance. It can also boost the operational efficiency of managing large systems. One of the biggest impacts of AI has been on the very cities we live in, transforming them into Smart Cities as well (Ahad et al., 2020). India has become the most populous country in the world with a population of 1.46 billion people. As per the 2011 Census, only 31.16% of the total population resides in urban areas but in absolute terms, it is 377 million urban dwellers. This means that there is going to be tremendous pressure on limited resources in the cities. This will further exacerbate problems like pollution, traffic congestion, and parking spaces. With the increasing population in urban areas, it is essential for cities to adapt to this growth by utilising their infrastructure and resources more effectively. Converting a city to a smart city can address this need by enabling cities to extract additional benefits from their current infrastructure (Wolniak & Stecuła, 2024, Kaur et al., 2023). Investing in Smart City upgrades will not only bring in fresh sources of income but also enhance operational effectiveness thereby leading to cost-savings.

At present there is a lack of comprehensive documentation on how AI is being used currently in India's smart cities. Sufficient analysis of success stories in various Indian cities is also not available. There is no framework yet to assess the readiness of Tier-II and Tier-III cities for compliance with AI-models. This paper attempts to analyse the interconnections between AI and Smart Cities and how AI can be applied to improve everyday life in cities. The paper also deals with the role of AI in shaping the core components of Smart City. It discusses

the Smart Cities Index 2025 and the adoption of AI in Smart Cities across the world. It further explores India's Smart City Mission and the various initiatives adopted by the state governments in India to integrate AI technology to develop and transform Indian cities into Smart Cities. The paper also identifies the challenges that governments need to address for successful integration of AI into the designing of these cities.

The concept of Smart Cities has undergone a significant transformation, over the years, evolving from rudimentary applications of technology to complex, integrated systems that aim to address a wide array of urban challenges (Faliagka et al., 2024). Initially referred to as "digital cities," these urban centers have progressively embraced information and communication technology to enhance various aspects of city life. There have been three waves of Smart Cities so far. In Smart City 1.0, the technology-providers implemented new technology in cities, even though the local government did not fully grasp the potential impacts of the technology or its influence on daily life (Tijjani et al., 2024). On the other hand, in Smart City 2.0, the cities themselves took the initiative with visionary leaders shaping the city's future and strategising the deployment of smart technologies and other advancements. In Smart City 3.0, the centre stage is held by a citizen-centric model. Vienna has adopted this innovative, third-phase approach. In Vienna, a collaboration has been established between the citizens and an energy firm. With this partnership, residents have been involved as investors in the local solar facilities (Skelton, 2024). The citizens have also been involved in addressing concerns like gender-equality and accessible housing. This phase is focused on infrastructure and efficiency, with projects centered on intelligent transportation systems, smart grids, and connected public services, demonstrating a commitment to digitalisation by fostering collaboration among stakeholders in both physical and digital realms (Tijjani et al., 2024). In our analysis of the literature, we found that no study has been done to look at the gains of India's Smart Cities' mission or where Indian cities stand in comparison to other smart cities across the world. Through this paper, there has been an attempt to address this research gap.

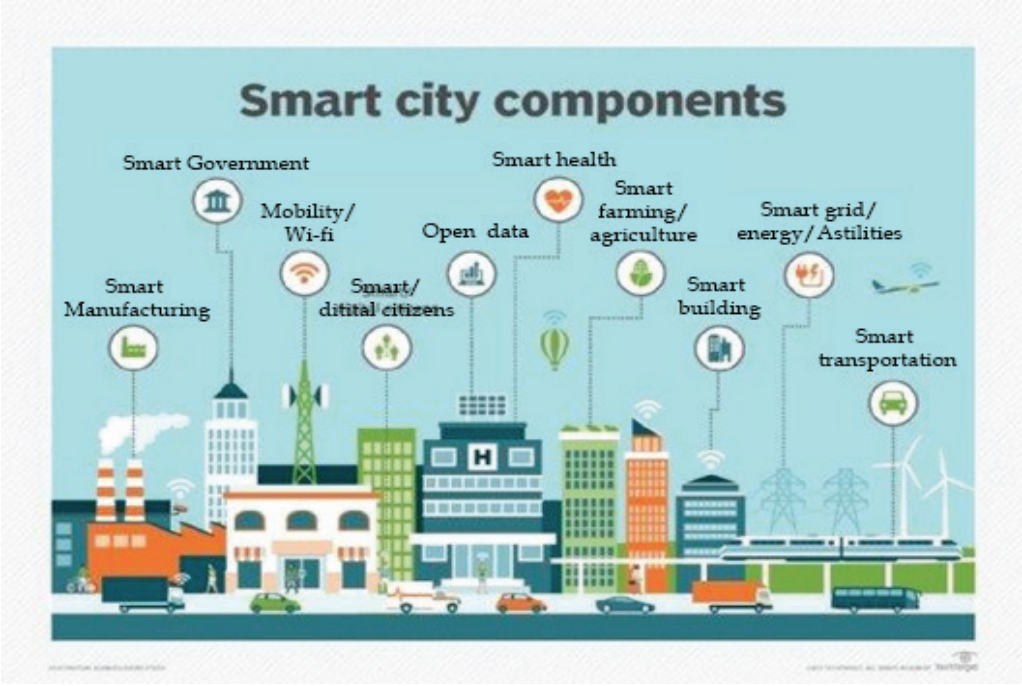
Smart Cities

A 'Smart City' is a community that employs information and communication technology to enhance its operational efficiency, disseminate information to the

public, and elevate the quality of government services and the well-being of its citizens. Figure 1 captures the various components of a Smart City, which includes Smart Manufacturing, Smart Health, Smart Grid or Utilities, Smart Transportation, Smart Government, Open Data, and Smart Citizens. (Peralta et al., 2022). AI plays a crucial role in converting a regular city into a Smart City.

Figure 1

Components of a Smart City



Source: Techtarget

Functioning of a Smart City Using AI Technology

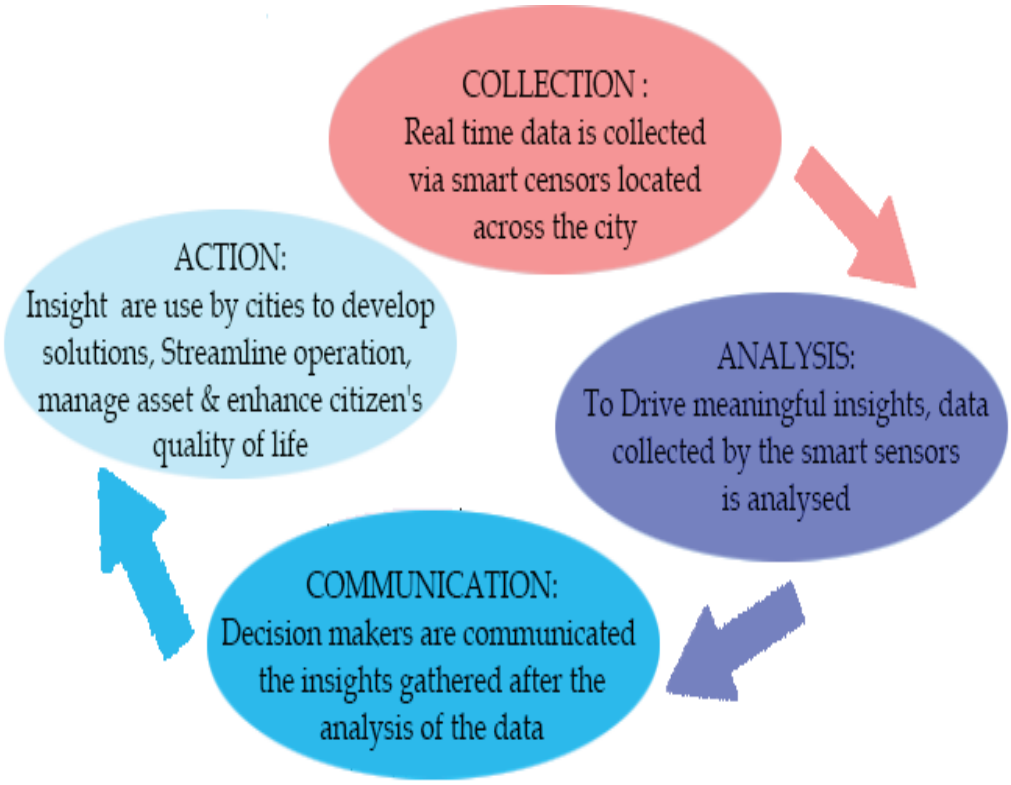
Any aspect of urban management can be included in a Smart City project. The common ones are:

Traffic Management: All urban areas struggle with increasing traffic, congestion, and carbon emissions. AI enables real-time traffic analysis to anticipate traffic patterns through the Intelligent Traffic Management Systems

(ITMS) leading to improved traffic flows, reduced bottlenecks, more efficient public transport systems and better safety (Tahmasseby, 2022). For instance, the 'Waymo' autonomous (driverless/ self-driving) taxis in the US cities of San Francisco, Los Angeles, and Austin. These smart cabs are expected to reduce demand for owned vehicles, congestion on the road as well as vehicular emissions.

Figure 2

How a Smart City Works Using AI Technology



Maintaining Public Infrastructure: AI can be used for detecting the deteriorating public infrastructure and alert authorities when repairs are required. Smart citizens can assist by alerting authorities via a Smart City app

when buildings, roads, and clogged drains leading to water logging or leaking water pipes need repair and maintenance. Thus, the AI can play a huge role in assisting in cost-effective and timely repairs.

Efficient Resource Use: Buses in cities can be fitted with sensors, which will provide data helpful in route-planning. This data can then be used to reduce underused routes and ease the overloaded ones. The same may also assist drivers in locating vacant parking spots using smart parking metres. Smart metres also facilitate digital-payment options. Another area where AI can be extremely helpful is to prevent wastage of precious water resources. Many cities across the world have hit 'Day Zero' due to indiscriminate exploitation of the groundwater. By identifying leakages in the water system, AI can prove to be a boon in ensuring conservation and effective use of water resources. Similarly, AI can be used to detect theft of electricity or leakages in the grid and help conserve electricity by preventing misuse.

Energy Efficiency: Smart cities require uninterrupted power supply for things to work smoothly and efficiently. Hence energy efficiency and conservation become crucial elements. How often have we seen streetlights on, during the day, while we struggle with power outages on the other? Smart sensors can detect when there are no vehicles or pedestrians on the road and use this data to turn the streetlights off (Farzaneh et al., 2021). With increasing availability of renewable energy, smart grid technology can incorporate it into the primary grid, supervise power failures, deliver electricity when needed, and improve planning, operations, and maintenance (Makumbe & Makusha, 2025).

Maintaining Law and Order: AI backed CCTVs can help in monitoring high-crime areas using face recognition technology (Al-Shaikh et al., 2024). This will contribute to increasing public safety (Hemalatha et al., 2025). Gunshot detection and location systems are in place in certain US cities, helping police apprehend criminals, in a short span of time.

Disaster Management: Smart sensors can be an essential part of a system that provides early warnings prior to cyclones, floods, landslides, or droughts.

Waste Management: According to the Ministry of Housing and Urban Affairs, India generates 62 million tons (MT) of municipal solid waste (MSW) every year, and by 2030, it is expected to reach 165 MT. Only 22% to 28% of this waste is treated. One of the biggest problems encountered in treating waste is the

segregation of mixed waste, also called Municipal Solid Waste. MSW comprises commercial and household waste and may contain paper, textiles, food scraps and plastics, which are difficult to segregate (earth5r.org). Therefore, the untreated waste ends up in either landfills or open dumps causing significant land, water, and air pollution. AI to the rescue! Robots can be used for waste segregation. This process will reduce landfills and make waste management much easier to monitor. Smart bins will indicate when bins need to be emptied and hence optimise waste collection routes.

Smart Buildings/Homes: Smart homes and smart buildings are a part of smart cities and comprise the use of many smart AI driven gadgets like robotic assistants, smart refrigerators, smart windows, smart TVs, smart lighting, smart security systems, smart heating/cooling, and smart air quality monitors.

Smart Manufacturing: The 4th Industrial Revolution is underway and is led by Smart Manufacturing. Innovative digital technologies are driving a fresh era of manufacturing advancement. "Smart factories" utilise industrial machinery that interacts with users, other devices, automated procedures, and systems to enable instant communication between the factory and the market for flexibility and enhanced productivity. These smart factories offer various advantages including enhanced operational efficiency, mass customisation, product excellence, sustainability, and safety, as well as reduced expenses (Ghahramani et al., 2020, Lila, 2021).

AI for Smart Health: AI can be used to monitor and analyse large volumes of data which can help in early detection of health issues and disease patterns (Antony, 2018, Xie et al., 2021). Smart wearable devices help in constant monitoring of the health of people and can provide useful insights for preventive measures. Robotic surgeries are already being carried out in hospitals across the globe.

Smart Cities Around the World : Based on IMD's Smart Cities Report 2025, published by the World Competitiveness Centre, Table 1 displays the top 10 smart cities across the globe out of a ranking of 146 countries. The criterion for the ranking is based on how infrastructure and urban technologies perform in the areas of governance, mobility, health and safety, opportunities, and activities.

Table 1

Smart City Ranking 2025 and comparison with 2024

City	Smart City Rank 2025	Smart City Rating 2025	Smart City Rank 2024	Change
Zurich	1	AAA	1	-
Oslo	2	AAA	2	-
Geneva	3	AAA	4	+1
Dubai	4	A	12	+8
Abu Dhabi	5	A	10	+5
London	6	AA	8	+2
Copenhagen	7	AAA	6	-1
Canberra	8	AAA	3	-5
Singapore	9	AAA	5	-4
Lausanne	10	AAA	7	-3

Source: IMD Smart City Index 2025

Zurich has put in place digital security, a smart building management system that links the city's heating, power and cooling systems, circular waste management, and energy efficiency. London is one of the smartest cities in the world. They have a 5G network which generates extensive real-time data crucial for traffic surveillance, law enforcement, and policing. A wide array of sensors, cameras, drones, and robots contribute to maintaining urban safety. A plan for repurposing excess heat from the Metro system to fulfill 38% of the city's heating requirements is a significant initiative. The city aims to reach net zero-emissions by 2030. Singapore has reduced waiting time for necessary public services. There is greater security in public areas. Nearly all administrative paperwork and procedures can be completed online, and citizens can access information from any location. Sensors and IoT-equipped cameras are employed to oversee the tidiness of public areas, crowd levels, and the traffic of registered cars. The city's advanced technologies aid citizens in tracking energy consumption, waste generation, and water usage in real-time. Singapore is also experimenting with self-driving vehicles, such as large robotic buses, and a health surveillance

system to ensure the welfare of its elderly population.

In Dubai, the Smart City technology plays a role in managing traffic flow, parking, urban development, and transportation. The city also implements intelligent solutions in healthcare, buildings, utilities, education, and tourism. In Oslo, Norway, effective waste management, energy conservation, traffic congestion alleviation, eco-design (circular economy: reuse, recycle, and reduce), and efficient architecture have all been applied. Whereas in Amsterdam more than 170 distinct operations, including solar-powered bus stops, billboards, lights, and smart metres, are part of the 2009-launched Amsterdam Smart City initiative. Dallas, Texas is a city in an arid region which receives little rainfall, making water a precious resource. Using smart devices to detect any leakages in the water supply system and fix them quickly helps Dallas prevent many gallons of water lost each year. A total of 1.7 trillion gallons of water were being lost each year in the U.S. due to water leaks. Seattle is a city flanked by water on one side and mountains on the other, having a space constraint. They have used smart monitoring for solving parking issues, homelessness data monitoring, early warning systems for earthquakes, assessing damages after an earthquake, and in New York City sensors have been installed to manage city services like waste management and public safety.

India's Smart Cities Mission

On June 25, 2015 the Honourable Prime Minister of India launched the Smart Cities Mission (SCM). By employing "smart solutions," the main aim of the mission is to assist communities in providing their inhabitants with a decent quality of life, environmentally friendly and enduring surroundings, and necessary infrastructure. By focusing on the physical, institutional, social, and economic aspects of the city, SCM aims to boost economic development and improve the standard of living of the people. In the first phase of the mission, one hundred cities were chosen to become Smart Cities. These Smart Cities can then become role models and help other cities by hand holding them and work towards equitable and sustainable development. Given below (Figure 3) are the six pillars of the mission. Figure 4 displays the progress of India's Smart Cities Mission, as on February, 2025.

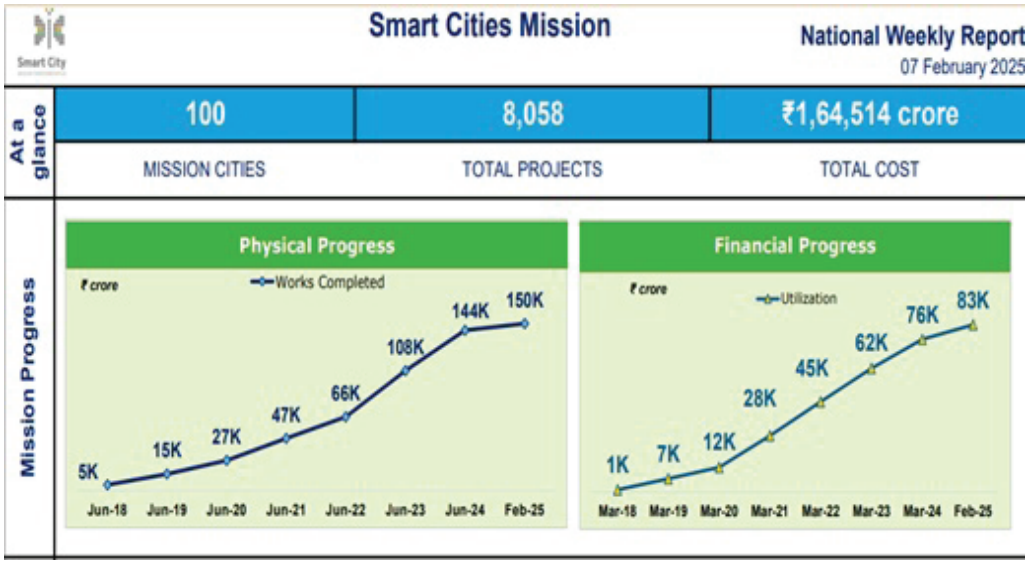
Figure 3

The Six Pillars of the Smart Cities Mission

Source: Smartcities.gov.in

Figure 4

Progress of India's Smart Cities Mission, 2018-25



Source: Smartcities.gov.in

In India, the AI-enabled digital public infrastructure platforms, like Aadhaar, UPI, Digiyatra, and DigiLocker have revolutionised governance. Those of us

who have used Digiyatra for domestic travel can vouch for the ease it brings to travel. Through face recognition, it enables visitors to move quickly through entry points without having to stand in multiple queues at multiple points, speeding up the entire process and minimizing the time required from entry at the airport to boarding the aircraft.

In 2023, the U.P government declared that it will develop Lucknow as the country's first AI city. The Karnataka government plans to use AI for identifying defaulters. AI-powered data analysis from Safe City cameras and BBMP *(Bruhat Bengaluru Mahanagara Palike)* vehicle surveillance will be used to detect illegal constructions, potholes, water stagnation points, garbage accumulation, unauthorised advertisements, and pedestrian encroachments.

Surat Smart City Development Limited caters to various departments which are involved in the management of the city traffic, fire and emergency services, incubation centres for innovation and trade facilitation, SUMAN eye (CCTV network) to cover bus stops, public parks, water works, water logging spots, and infrastructure construction sites.

The U.P. government, used AI based predictive-policing for crowd management during the Mahakumbh Mela in 2024. The Mahakumbh Mela, 2025, a major Hindu festival celebrated once every 12 years, signifying spiritual liberation was held this year from 13 January to 26 February in Prayagraj, Uttar Pradesh. It saw a footfall of 66 crore pilgrims in 45 days. These humungous crowds were managed with great dexterity by the government by using a digital command centre and drones, relying on the power of AI. More than 2750 CCTV cameras backed by AI tracked the crowd movements using facial recognition, traffic movement and vehicle number plate recognition. Under-water drones were deployed as well for aquatic surveillance.

Some of the shopping malls in Delhi, the capital city of India, have implemented 'Smart Parking Management Systems. These sensors detect whether a parking spot is free or taken and indicate at the entrance to the parking, how many slots are available or whether the parking is full. If mapped to an app, the car owners will be able to make the booking of the car parking on the app for the desired amount of time. If they are exceeding the time for which the slot is booked, the app will notify them (Asha et al., 2023; Sehar, 2023). Inside the parking area,

each parking slot is fitted with a light bulb and a sensor. Once the car occupies a parking space, the sensors send a signal to the light bulb to turn red. When the car leaves a parking slot, the light turns green. Thus, car owners need not waste time or fuel in locating a vacant parking slot or going in circles. They can simply locate a green light from far away and reach the vacant parking space. However, this system is not yet fully digitised as it has not been mapped to an app and the payment is also not online.

Challenges of Smart Cities

High Costs: The costs of moving to digitised networks may be significant in the initial stages though in the long term, the improved efficiency, reduced turnaround time, energy consumption and greater revenues will more than compensate for the higher initial costs. Figure 5 shows some of the global mega cities' population and the spending distribution of global Smart City initiatives in 2020. As we can see, Delhi tops the list of mega cities at number 3 in terms of the population but is not visible in the pie chart on the right signifying the low spending on smart city initiatives relative to the other countries.

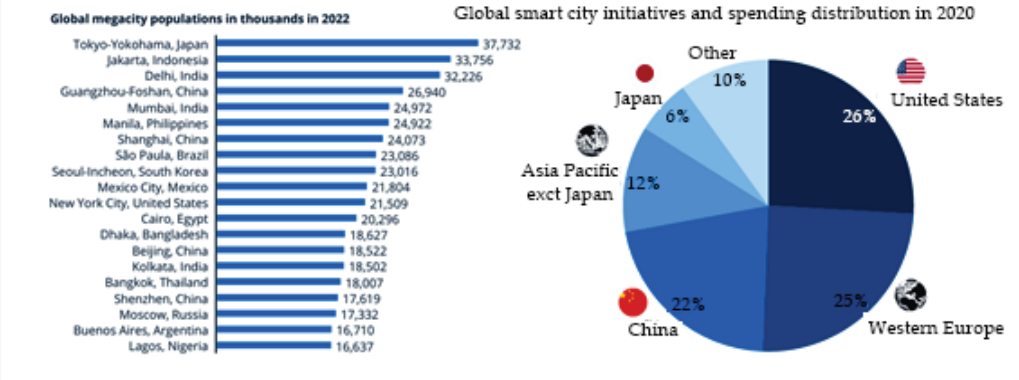
Data Security Issues: Security of data is of utmost importance in such a set up. Due to the fact that a significant portion of a city's essential infrastructure will be linked to the internet, it will be vulnerable to cyber-attacks (Szpilko et al., 2023). If not adequately protected, there is a risk that information may be stolen, operations halted by ransomware, machinery could be harmed, or individuals may be endangered, if crucial services are disrupted. The data gathered in Smart Cities must be made anonymous and should not include any personal details.

Accuracy of Data: Managing information is a vital component of any AI initiative. Data has to be cleaned and data accuracy is of utmost importance. There is a need to update statistics continuously due to changing regulations and the dynamic nature of information management in the public sector (Shoaib & Shamsi, 2019).

Connectivity Issues: The primary obstacle confronting smart cities is connectivity. The numerous IoT gadgets spread throughout the urban area would serve no purpose without a stable connection, leading to the demise of the Smart City itself (Haque et al., 2022).

Figure 5

Comparison of Global Megacities with respect to their populations and their spending on Smart City Initiatives in 2020



Source: Statista

Fostering Collaboration

Fostering a connection and partnership between the public and private sector and the citizens is key to the success of a Smart City. This bond is crucial as a significant portion of the efforts to establish and sustain a digital, data-focused setting take place, beyond government-involvement. For instance, the surveillance system for streets may incorporate sensors from one company, cameras from a different one, and a server from yet another, with the information being relayed to the government agency for further action. Therefore, establishing such platforms for such collaborations to thrive is crucial.

Conclusion

AI has the potential to improve productivity while rendering many jobs obsolete. India with its large workforce needs to skill and train the youth in emerging areas of AI. If we fail to prioritise this, we run the risk of not only suffering huge unemployment but also not reaping the 'once in a lifetime opportunity' of the demographic dividend.

If the gap between the haves' and the have-nots' is not bridged using health

and education, AI shall further exacerbate the inequalities plaguing the Indian economy. Those who have access to AI will be in a commanding position and can lead to further concentration of resources in a few hands, if not managed appropriately (Alseqyani, et al., 2025). Thus, the role of the state becomes paramount in balancing innovation and ethical issues, technological progress and unemployment, inequalities that AI may generate and the opportunities that it provides. The way forward, calls for a collaborative and strategic approach. The governments must prioritise the creation of reliable and strong data systems, invest in digital infrastructure, and promote AI literacy across all levels of governance. Policy frameworks must ensure that AI is used ethically, transparently, and inclusively. The government should also invest in private-sector innovation and academic research to build indigenous AI solutions, suiting the needs of that city, since, AI is not just building smart cities, rather it is shaping the future of our living.

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Environmental Sustainability and Economic Growth: Bridging the Gap for a Greener Tomorrow

Sonia Sharma

Abstract

This study explores the connection between economic growth and corporate social responsibility towards the environment, focusing on how leading Indian companies are integrating sustainability into their business model. Environmental sustainability and economic growth are considered as contradicting and hard to achieve together. But with the rise of green corporate strategies and environmental sustainability policies these goals are increasingly attainable. This paper seeks to examine sustainable business practices which focus both on financial success as well as ecological well-being and to evaluate the role of government policies as well as the contribution of companies and the society in sustainable economic growth. By examining real world examples, this paper highlights the importance of corporate leadership in achieving economic growth which is more in sync with a sustainable environment. The findings suggest that the growth of an economy should not be achieved at the cost of the environment, rather, innovative corporate strategies and policies can bridge the gap between financial success and sustainability, paving the way for a greener and more robust and vital future.

Keywords: *Environmental sustainability, Economic growth, Corporate Social Responsibility, Financial success, Government policies*

Introduction

The focus of the current Indian government is on environmental development along with economic growth. India is rapidly progressing towards becoming a fully developed nation by the year 2047 on the completion of its hundred years of independence. This is the underlying principle of India's vision of Viksit Bharat 2047 (NITI Ayog, 2023)

For years people have believed that protecting and improving the environment cannot be done while simultaneously trying to become a developed nation. However, in the present scenario, various Indian companies are showcasing that these two can be achieved simultaneously. These organizations are proving that profitability can coexist with environmental responsibility. Through their CSR initiatives, their focus is on measures like saving energy, reducing pollution, using resources wisely, and helping communities enhance both sustainability and long-term growth of their business.

Leading Indian organizations like Reliance Industries, Tata Group, Infosys, Wipro, and Mahindra & Mahindra are setting examples for others. They include sustainability in their regular activities and in their long-term goals (KPMG, 2022). Furthermore, the Indian government has also introduced various policies which provide a supportive environment for business, enabling them to achieve their financial goals along with ecological sustainability. These include the National Action Plan on Climate Change (NAPCC) (Gupta & Sharma, 2020), rules for managing waste, and laws that make CSR spending mandatory under the Companies Act, 2013 (Ministry of Corporate Affairs, 2022). This research explores how Indian entrepreneurs are connecting economic growth with environmental responsibility through their Corporate Social Responsibility efforts. It also examines how government rules and corporate leadership are helping the nation to progress toward its Viksit Bharat 2047 goal of a greener and stronger future.

Literature Review

The synergies of every country are engaged in both economic growth as well as protection of the environment. Environmental sustainability has become a pivotal part of strategies for development across the world. Different researchers have different views in this regard. Many think that the two goals: economic

development and environmental sustainability can't be attained together. Daly (1996) argued that unchecked growth often harms the environment, whereas Stern (2004) emphasized that sustainable models can allow both goals to be achieved simultaneously.

In India, Corporate Social Responsibility (CSR) has emerged as a crucial step for addressing environmental concerns and working for its improvement. After the Companies Act, 2013, CSR became mandatory for certain firms. As a result, Indian businesses have started incorporating responsibility towards the environment into their vital business strategies (KPMG, 2022). In India Corporate Social Responsibility now goes beyond philanthropy and focuses more on goals of long-term sustainability (Gupta & Sharma, 2020).

Ambadkar and Yadav (2025) iterate that business success and environmental care can go hand in hand. Many leading Indian organisations have taken crucial steps toward sustainability through their Corporate Social Responsibility efforts. For example, Reliance Industries is putting their investment in clean energy, Tata Group adopts circular economy models, and Infosys and Wipro focus on green buildings and carbon neutrality whereas Mahindra & Mahindra is popular for its efforts in water conservation and waste reduction.

Government policies have also supported this movement. The National Action Plan on Climate Change (NAPCC) and initiatives like Swachh Bharat Abhiyan have encouraged companies to take environmental care on serious grounds (Government of India, 2023). Government policies and corporate efforts together support promotion of a model of growth and development that aligns with environmental care. India's long-term vision of Viksit Bharat 2047 strongly emphasizes on sustainability, tech-driven innovation, and green development. It urges businesses to expand in a way that safeguards the planet and promotes economic development (Daly, 1996). CSR activities that align with this vision help companies contribute to national priorities while building public trust.

Recent researches also showcase that organizations which follow strong Environmental, Social, and Governance (ESG) practices attract more investors and their performance in the long run becomes better. Sustainable companies are supposed to face lesser legal, environmental, and reputational risks.

In summary, the literature shows a positive trend toward integrating

sustainability with business goals. Indian companies, supported by government policies and frameworks like Viksit Bharat 2047, are showing that green growth is not only possible but also profitable.

Research Objectives

1. To explore how environmental sustainability connects with economic development in the operations of leading Indian businesses.
2. To assess the role of CSR in balancing financial performance with environmental responsibility.
3. To examine the sustainability-driven business models implemented by leading Indian companies such as Reliance Industries, Tata Group, Infosys, Wipro, and Mahindra & Mahindra.
4. To assess how the Indian regulatory framework influences corporate efforts toward sustainable growth.

Research Methodology

This paper is qualitative and exploratory research. It is based on secondary data from 2019 to 2025. It explores the Environmental Social and Governance (ESG) practices, Corporate Social Responsibility initiatives, and regulatory influences on five leading Indian companies: Reliance Industries, Tata Group, Infosys, Wipro, and Mahindra & Mahindra.

Data was collected from secondary sources such as company reports, SEBI regulations (like BRSR), and credible public sources. In this research, purposive sampling (also known as judgmental or selective sampling) method was used. Here the researcher focused on companies with active ESG disclosures. Analysis involved content and thematic analysis to evaluate the research objectives and test the hypotheses qualitatively.

Data Analysis and Findings

Based on qualitative evaluation of secondary information sourced from company ESG reports, CSR disclosures, and regulatory frameworks between 2019 and 2025, a thematic analysis was conducted to identify patterns and relationships between environmental sustainability, financial performance, and regulatory influence. Key findings were organised across four major objectives

and corresponding hypotheses, with a focus on real-world initiatives by leading Indian companies. The analysis provides evidence to assess whether ESG integration supports business growth and aligns with national sustainability goals.

1.Integration of environmental sustainability into business operations

Between 2019–25, all selected companies transitioned from compliance based environmental practices to more innovation powered sustainability models:

• **Reliance industries:** It invested in solar power and green hydrogen much earlier than others. By the year 2019, it had shifted towards clean energy goals and launched Reliance New Energy Solar Ltd. In 2020, Reliance Industries set a target to invest INR 75,000 crores in solar PV, green hydrogen, batteries and fuel cells. In 2021 it invested $10 billion in green hydrogen and solar power with the aim of transforming long term energy use. Post 2020, it accelerated its green mission by launching India's largest solar giga factory and aimed to establish and enable 100 GW of solar energy by 2030. Reliance is committed to becoming a net-zero carbon company by 2035. Furthermore, it has built India's largest integrated renewable energy manufacturing hub in Jamnagar, Gujarat. It has also achieved recycling of over 2 billion PET bottles annually through its 'Ecoplast' initiative. They are sourcing biomass as an alternative fuel for their Dahej and Hazira sites in Gujarat to reduce their carbon footprint.

• **Tata group:** It was the first Indian steel company which received 'Responsible steel' certification in the year 2022. Tata Motors recycles 85% (approximately) of manufacturing waste and launched a 'Scrappage' program. This vehicle scraping program was named as Re.Wi.Re. – Recycle With Respect. This program is part of the national vehicle scrappage policy and involves setting up Registered Vehicle Scrapping Facilities (RVSFs) across India. The first RVSF was launched in February 2023, and the network has been expanding since then. Besides this, Tata Motors is India's leading EV manufacturer with the Nexon EV and Tigor EV, selling over 1,00,000 EVs by the year 2024. Tata Green bond listing (2022) attracted ESG-focused investors, boosting capital inflow. There is an increase in capacity and investor's confidence in the green portfolio due to the shift towards renewable energy. Its aim is to generate a substantial portion of its power from clean sources by 2030. Tata Chemicals is involved in

Lithium-ion battery recycling, recovering valuable metals from used batteries. Tata Power has launched a Green Energy Skilling Centre in Delhi to build a workforce for India's energy transition. Tata Group's 'Aalingana' initiative fosters sustainable businesses and embraces a vision of Net Zero by 2045. It focuses on decarbonisation, circular economy principles and environmental preservation.

• **Infosys:** The company has been carbon neutral since 2020, achieved by carbon offsetting, renewable energy sourcing, and green campuses. It has achieved the goal of carbon neutrality 30 years ahead of the 2050 timeline set by the Paris Agreement. The company uses AI for efficiency. It has implemented smart building tech for the purpose of energy reduction of 44% per employee. They have implemented building retrofits to reduce energy consumption, resulting in a 35 MW reduction in connected load. Infosys holds the highest level of green building certification. Till the financial year 2025 Infosys has 10 buildings covering 2.7 million square feet that have received the LEED Platinum rating for green building design and operation. It has introduced a sustainable travel policy due to which employee air travel emissions have been reduced by over 50% since 2019. Infosys has also focused on diverting waste from landfills, with a target of zero waste to landfill by 2030. They have installed 60 MW solar capacity which includes a 40 MW captive solar power plant in Sira, Karnataka, and 14.4 MW of rooftop solar panels at various offices.

• **Wipro:** In the process of using environmentally friendly technology in business operations Wipro is also not lacking behind. They have a target of using 100% renewable energy by the end of the financial year 2030. Wipro has invested in renewable energy companies like FPEL Ujwal, demonstrating a commitment to supporting the growth of the green energy sector. Wipro recycles resources and eliminates waste at the source throughout their corporate headquarters and production plants through applying the ideas of the circular economy. Wipro has introduced a sustainability dashboard by which they track progress in several categories, including community well-being, water management, and climate change. Wipro helps clients change to low-carbon operating models and lessen their carbon footprint by providing sustainable engineering services, such as process and technology-led solutions. Wipro's 'Earthian' program is one of the biggest sustainability education initiatives in India for educational institutions (schools and colleges). It has implemented environmental education in more

than 13,000 schools and 4,000 colleges till the year 2025, according to the Wipro Foundation. They have partnered with over 50 vendors for sustainable procurement, reducing scope 3 emissions. They have achieved a 70% water recycling rate till now across Indian campuses and aim to achieve 100% organic waste recycling by the end of the financial year 2025-26.

• **Mahindra and Mahindra:** They have committed to become carbon neutral by the end of 2040. This includes their commitment to become a net zero in scope 1 and scope 2 emissions, water consumption, and waste. Till now they have achieved 10% of these emissions. They are concentrating on solar-wind projects as they develop into the hybrid renewable energy sector. Mahindra Susten, a major contributor, has developed 1.5 GWp+ of renewable assets and carried out 4.2 GWp+ of renewable projects. They have saved more than 15 billion liters of water annually and has been declared as water positive in the year 2022. Under their 'Prerna' project, they have reached 20,000 women farmers with climate friendly technology by 2025.Mahindra Lifespaces is the only real estate firm in India creating properties that are 100% green certified and has created energy and water conservation requirements. They are also working towards sending zero waste to landfill from its sites and have already achieved over 85% of sites with zero waste to landfill. They have a target to invest INR 21,000 crore over the next five years to develop a renewable energy asset portfolio of nearly 5.5 GW.

2. CSR as a Strategic Tool for Environmental Responsibility

Corporate social responsibility initiatives of selected organizations between year 2019 to 2025 went beyond compliance, reflecting strategic alignment with SDGs, community resilience, and environmental targets:

- Reliance industries: Reliance foundation has installed microgrids in over 200 rural villages. They have partnered with UNDP on disaster – resilient infrastructure in cyclone affected areas.
- Tata group: Tata trust founded solar cold storage units for farmers to reduce post-harvest waste. They have supported indigenous forest conservation projects in Jharkhand and Odisha.
- Infosys: Infosys foundation collaborated with NGOs to build sustainable units and plant over 1 million trees under the 'Eco Restoration'

initiative.

- Wipro: Wipro foundation invested in urban biodiversity parks in Bengaluru and Pune. They have developed climate action labs with students and civil society participation.
- Mahindra and Mahindra: Mahindra hariyali planted more than 15 million trees from 2007 to 2025. They also have integrated agro forestry in more than 500 farming communities.

3. Financial and Operational Impact of Sustainability Integration:

The integration of corporate social responsibility and environmental sustainability has provided tangible financial advantages, improved operational efficiency and yielded strategic growth for Indian companies.

Key financial and business benefits include

i. Reduced operating cost

- Infosys: They have achieved a reduction of 55% in per capita energy use till the year 2025. Their cost savings have exceeded INR 100 crores due to their transition to 100 % renewable energy for India based operations.
- Wipro: Its green buildings save INR 50 crores approximately per year in utility cost. (according to Wipro Sustainability Report, 2024)
- Tata Power: They have invested more than INR 20,000 crores between 2019 and 2025 for expanding solar, wind, and hybrid energy capacity. Levelized cost of energy from solar projects dropped down to INR 2.45 – INR 3.10/kwh. Its operational expenses were reduced by ~15 – 20 % in solar units due to minimal fuel and maintenance needs. Tata power's stock price rose over 300% from 2020 to 2024 driven mainly by its clean energy transition and investors' confidence.

ii. Access to Green Finance

- Tata group secured $ 525 million in green bonds in 2023 for its EV and clean tech units. In 2025 it reached ~$1.15 billion for EV, clean-tech, sustainable infrastructure.

- Reliance industries obtained a loan worth $2 billion in the year 2022-24 from global lenders. This was a sustainability linked loan.
- Mahindra and Mahindra obtained preferential terms for funding its EV and sustainability ventures in agriculture through green finance initiatives.

iii. ESG Ratings and Market Positioning

- Infosys, Tata Consultancy Services and Wipro consistently featured in worldwide sustainability indices such as Dow Jones Sustainability Index, FTSE4 Good Index CDP (Carbon Disclosure Project) Leadership A-List
- Higher ESG scores attracted institutional investors and FIIs

Table 1

Showing company wise ESG rating and Market performance from 2019 to 2025

Company	Year	MSCI ESG Rating	CDP Score
Infosys	2019	AA	B
	2020	AA	A-
	2021	AA	A
	2022	AAA	A
	2023	AAA	A
	2024	AAA	A
	2025	AAA	A
TCS	2019	A	B
	2020	A	B
	2021	AA	B
	2022	AA	B
	2023	AA	B
	2024	AA	B
	2025	AA	B

Wipro	2019	A	B
	2020	A	B
	2021	AA	B
	2022	AA	B
	2023	AA	B
	2024	AA	B
	2025	AA	B
Mahindra & Mahindra	2019	BB	C
	2020	BB	C+
	2021	BBB	B-
	2022	BBB	B
	2023	BBB	B
	2024	A	B+
	2025	A	A-
Reliance Industries	2019	BB	C
	2020	BB	C
	2021	BBB	B-
	2022	BBB	B
	2023	A	B
	2024	A	B+
	2025	A	A-

Source: MSCI ESG Ratings, CDP Reports, Company sustainability disclosures & ESG reports (2019-2025) and some third party ESG platforms like Bloomberg and Sustainalytics

Note: according to MSCI ESG Rating – AAA = best and CCC = worst and according to CDP Score: A = Leadership, B = Management, C = Awareness, and D = Disclosure

iv. Portfolio and Investor Confidence:

- Because of its growing EV sales Mahindra Electrics saw a 15% increase in revenue in the year 2023-24.
- In the first semester of 2025 Reliance's green energy arm added $10 billion to its valuation.
- Tata motor's EV division became a separate listed entity in 2024 with strong retail and institutional investor response due to ESG appeal.

v. Enhanced Reputation and Risk Management

- The firms which have a strong ESG profile face lesser risk of regulatory penalties, reputational risk, and supply chain disruptions. It benefited companies during post COVID recovery.
- It is observed that sustainable brands gained trust of their consumers which resulted into higher product preference, especially in urban markets.

4. Impact of Indian Regulatory Framework (2019-2025)

Corporate sustainability practices have been significantly impacted by India's dynamic policy environment between 2019 and 2025, which has acted both as a compliance driver and a catalyst for innovation.

Key Policy Developments and Their Influence:

i. Companies (CSR Policy) Amendment Rules, 2019 & 2021

- Made impact assessment mandatory for companies with CSR projects ≥ ₹1 crore.
- Shifted focus from mere spending to evaluating long-term environmental and social outcomes.
- Led companies like Infosys and Tata to publish detailed impact reports with measurable ecological benefits (e.g., CO_2 saved, trees planted, water restored).

ii. SEBI's BRSR Framework (2021–2023)

- Mandated Business Responsibility and Sustainability Reporting for the top 1,000 listed companies by FY 2022–23.
- Standardized disclosure of ESG metrics: emissions, energy use, waste, biodiversity, resource use, etc.
- All five selected companies began disclosing structured ESG data aligned with SEBI's key performance indicators.

iii. National Action Plan on Climate Change (NAPCC)

- Companies aligned their CSR and ESG strategies with eight NAPCC missions, such as:
- National Solar Mission (Infosys, Tata Power)
- National Water Mission (Mahindra's water conservation work)
- Sustainable Habitat Mission (Green building initiatives by Infosys and Wipro)

iv. Energy Conservation (Amendment) Act, 2022

- Introduced carbon markets and energy efficiency targets for commercial entities.
- Encouraged green building codes, promoting investments in LEED, GRIHA certifications across the private sector.

v. Viksit Bharat 2047 Vision

- The long-term development plan launched by NITI Aayog emphasized green innovation, sustainability, and net-zero pathways.
- Motivated companies to integrate national sustainability goals into their business roadmaps (e.g., Tata's zero waste to landfill, Reliance's green hydrogen ambition).

vi. Voluntary Carbon Markets and ESG Assurance (2024–25)

- SEBI and MoEFCC began exploring frameworks for carbon credit trading and third-party ESG assurance, pushing for higher transparency and corporate accountability.

On the bases of the above information, it can be confirmed that ESG incorporation into major Indian company's operational and strategic planning between 2019 and 2025:

- promotes sustained business expansion
- increases consumer and investor trust
- spurs efficiency and innovation
- makes a tangible contribution to India's global climate pledges and environmental objectives

This confirms the general theory that company ESG integration is in line with national environmental goals and financial performance, especially when made possible by regulatory backing and the availability of green finance. From 2019 to 2025, major Indian corporations—including Reliance, Tata Group, Infosys, Wipro, and Mahindra & Mahindra—made significant steps for embedding environmental sustainability into their core business strategies. These companies moved beyond basic compliance to adopt innovation-led approaches, investing in areas such as renewable energy, electric mobility, green buildings, and circular economy practices. CSR initiatives of these companies became more strategic, closely aligned with the Sustainable Development Goals (SDGs), and focused on climate resilience, environmental protection, and community development. The adoption of ESG principles resulted in remarkable financial and operational benefits, such as lower operational costs, easier access to green funding, improved ESG ratings, and increased investor trust. For instance, companies like Infosys and Tata Power reported substantial savings and growth in market value, while Reliance and Mahindra secured large-scale sustainability-linked loans. Regulatory initiatives including SEBI's BRSR norms, CSR policy amendments, and national climate strategies played a critical role in driving transparency, impact reporting, and alignment with India's green transition. Overall, the findings highlight that integrating ESG practices not only offer corporate growth but also supports broader national sustainability and development objectives.

Limitations of the study

This study is limited by its reliance on qualitative and secondary data from 2019–2025, focusing only on five major Indian companies. While these firms

offer valuable insights, they may not reflect the practices of smaller businesses or other sectors. The study does not include quantitative analysis, and the findings are based on self-reported data, which may include biases. Additionally, it is centered on Indian regulatory frameworks and does not compare global ESG standards.

Conclusion

This study explored the intersection of environmental sustainability, corporate social responsibility (CSR), regulatory frameworks, and business performance among leading Indian companies such as Reliance Industries, Tata Group, Infosys, Wipro, and Mahindra & Mahindra. Through qualitative analysis of recent (2020–2024) sustainability and financial reports, the research uncovered several key insights that reinforce the growing importance of ESG (Environmental, Social, and Governance) integration in Indian business practices.

Firstly, the evidence strongly suggests that environmental sustainability is no longer a peripheral concern but a core strategic lever for economic development. Companies like Tata Power and Mahindra have successfully aligned clean energy initiatives and electric mobility with market expansion and investor attraction, demonstrating that green initiatives can directly support economic growth.

Secondly, the study found that CSR activities focused on environmental responsibility are not only fulfilling regulatory requirements but also enhancing long-term stakeholder value. Firms such as Infosys and Wipro have reported increased client confidence and employee engagement linked to well-structured environmental CSR programs.

Thirdly, the adoption of sustainability-driven business models, particularly those involving energy efficiency, circular economy practices, and renewable integration, has clearly improved operational efficiency, cost savings, and competitive advantage. These models, as seen in Infosys, Tata Steel, and Wipro, contribute to both immediate financial returns and long-term resilience.

Finally, the influence of the Indian regulatory framework, especially SEBI's BRSR mandate and the CSR amendments, has been instrumental in standardizing ESG practices and accelerating transparency. Regulatory compliance has evolved from a checkbox exercise to a strategic imperative, pushing companies

to align business goals with sustainable development objectives.

Considering the findings, all four null hypotheses were rejected, confirming that sustainability practices, CSR engagement, and regulatory compliance significantly influence both financial performance and strategic direction. Therefore, it is evident that ESG integration offers Indian businesses not just compliance benefits, but a distinct competitive advantage in a global market increasingly driven by sustainable value creation.

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Gana or Ancient India's Republican Political System

Prabira Sethy

Abstract

The present paper is an attempt to analyze the republicanism prevalent in ancient India which was one of the foundational stones of the ancient Indian state and how it has disproved the occidental views about ancient Indian political system which mainly rested on the notion of 'oriental despotism'. Secondly, it explores how the Jain works, Greek authors' works, Panini, literature on Buddhism, coins, literary evidence, etc. bear an important testimony to the existence of republics in ancient India. Thirdly, the paper has given a glimpse about different ancient republics which were recorded in the Buddhist literature and in epics like *Mahabharata*. Fourth, it has also highlighted the key characteristics of ancient Indian *Ganas* or republics which were ingrained in Hindu politics. Finally, the paper has made assessments and delineated the causes of the decline of ancient Indian republics from Hindu India.

Key Words: *Gana, Sangha, Acharangasutra, Nyaya Vyavastha, Shanti Parva, Vargya, Grihya*

Introduction

Less than a century ago, Western Indologists believed that India's influential contributions to literature were limited to metaphysics, philosophy, and religion and had little to do with political concepts and governmental structures. Therefore, 'Oriental despotism' was the central tenet of Western perceptions of the ancient Indian governmental structure. However, the long-

standing misunderstanding regarding India's ancient political institutions was significantly dispelled by the translation of *Arthasastra* and Buddha's *Digha* Nikaya into European languages. According to research conducted not only by renowned Indian academicians like K. P. Jayaswal and Shobha Mukherjee, but also by Western Indologists like Rhys David and Oldenberg, India had enjoyed and experienced republicanism for almost a thousand years between the 6th century B.C. and the 4th century A.D., long before the Greeks or Romans could think or work along those lines. However, it was David, who thought that republicanism was one of the pillars of the old Indian State, and is credited with first exposing the republican nature of ancient India. Jayaswal eventually collected the disparate allusions to the republics that can be found in Indian literature into a series of articles that were then combined into his well-known book *Hindu Polity* (2021).

India had a strong foundation in the science and art of politics long before Plato and Aristotle could develop philosophical ideas about the state, create governing rules, and project a set of values. The idea of a republican polity was one of India's greatest accomplishments. The ancient Indian republican typology was based on the acceptable current definition of a republic, which is a non-monarchical, elective rulership with men united for common objectives, a moderate and constitutional spirit in administration, delegation of authority, and popular legitimacy behind power (Roy, 1993). Based on the historical records of ancient India, it seems that the monarchy and republics coexisted peacefully and cooperatively. The earliest records that are currently accessible demonstrate that during the Vedic era, monarchy was the exclusive system of government. In several regions, monarchy was only superseded by alternative kinds of government during the post-Vedic era. In theory, both the *Mahabharata* and the works of the Greek traveler, Megasthenes lend credence to the notion that republics emerged long after monarchies.

Understanding the Etymology of *Gana*

'Republic' has been referred to by different names in ancient Indian literature. *Gana* is one such name; it was a state ruled by several people rather than just one. *Gana* denotes a particular kind of state that is very different from monarchy. *Gana* was the name given to the Assembly or Parliament based on the number of members in attendance. The alternative name for the 'Republic'

was *Sangha*, which is interchangeable with *Gana*. While *Gana* refers to the type of government, *Sangha* denotes the state and was a single entity. Thus, the term *Gana-rajyas* was more commonly used to refer to republics in ancient India. 'Numbers' is what *Gana* implies. The 'rule of numbers' or 'the ruling by many' is what *Gana-rajya* signifies. Two Sanskrit terms have been used to refer to a polity that does not have a king. One such term that might denote a confederation of republics in a political context is *Samgha*. If the term *Samgha* is found in Buddhist literature, it refers to a monastic organization. *Gana* is another term that has been used in literature on Kingless polity. In Roy's *Foundations of Indian Polity* (1993), Indologists, Fleet and Monier Williams referred to *Gana* as a tribe, while for Buhler, it is a corporation of workers and craftsmen, and Jolly assumes that *Gana* refers to a meeting. According to Jayaswal (2021), a *Gana* represents what is known as a republic i.e a constitution without a king. After reviewing the many explanations offered by the experts, he claims that *Gana* was the assembly or parliament that got its name from the "numbering" of members in attendance. As a result, *Gana-rajya* signified assembly or parliamentary government. 'Parliament' or 'senate' became the secondary meaning of *Gana*, and as republics were run by them, *Gana* came to suggest a republic (Jayaswal, p. 25).

According to some authors, the *Gana*-States were oligarchies or aristocracies rather than republics or democracies since authority was concentrated in a tiny aristocratic class rather than the entire populace. It is accurate to state that the universal adult franchise, which is a feature of contemporary republican states, was not present in *Gana* States. The whole adult population did not have power. Nonetheless, *Gana* States can still be categorized as republics as, unlike monarchies, republics are governed by a group or college of people, usually much larger than one individual. Republics have been referred to as oligarchies, aristocracies, and democracies. The United Netherlands, Poland, Sparta, Athens, and Rome have all been characterised as republics, despite the fact that a small minority held control over the great majority in each of these cities. The ancient Indian *Gana*-States can be categorised as republics in the same way that the ancient Greek and Roman States were referred to as such. These states had a reasonably large class of people that held the sovereignty, not just one person or a select few. Therefore, it is reasonable to refer to the ancient *Gana*-States as republics in the same way that Western Political Science texts refer to

the States of Athens, Sparta, or Venice as republics, while also keeping in mind that they were not modern democracies, where the right to vote is granted to as many citizens as possible (Altekar, 1949).

Information Sources Concerning Republics or *Ganas*

Works by Jain Writers - A Jain text called *Acharangasutra* counsels monks to journey through states with monarchies. It indicates that there were kingless states as well, most likely republics or *Ganas*.

Greek Authors' Works - Greek authors who accompanied Alexander to Punjab have written about the presence of numerous great republics, including the Kathaians, Adrestai, Sambhusti, Vrishnis, Vudheyas, Kshudrakas, Malavas, Agsinae, and Ambashthas. The majority of the populace were warriors and patriots, and they fiercely resisted the invaders. The majority of Punjab and Sind, which were included in the Greek writers' survey, only depict two or three monarchies, such as the kingdom of Porus and Abhiraas; otherwise, the entire nation was republican (Myneni, 2016).

Panini - *Gana* has been used for *Sangha* by Panini. He cites the following republics: the Brahmagupta, the Janaki, the Hadra, the Virji, the Rajanya, the Dandaki, the Jalamani, the Yaudheya, the Damani, the Kaundoparatha, the Kaushtaki, and so on. He has arranged them according to the Houses of the Legislature.

Literature on Buddhism - The political word Sangha, which was equivalent to *Gana*, was the source of the Buddhist name *Samgha*. Some republics, such as the Vrijis, Mallas, Sakyas, Koliyas, Lichchavis, Videhas, Moriyas, Bulis, Bhaggas, etc., have also been mentioned in Buddhist literature. We have learnt a lot from the Buddhist literature about different republics and their deliberative systems. It has also made references to a confederation of republics, wherein each republic was accorded sovereign equality.

***Arthashastra* -** *Kautilya's Arthashastra* provided a wealth of knowledge regarding how republics function. Kautilya distinguished between two types of republics: (a) those with a head who held the title of Raja, and (b) those without. Additionally, it seems that having military prowess was a requirement in several of the republics. We conclude that several of the republics had declined by that time and had been replaced by monarchy because Kautilya did not mention any

significant republics.

Mahabharata **-** *Mahabharata*'s Shanti Parva made reference to *Gana*, the entire political group and body. *Pradhanas* and *Gana Mukhyas* made up the ruling body. Members of republics also seem to have frequently grumbled about the lack of secrecy. Typically, these also established confederacies. It was also recognised that the threat to *Gana* came from inside rather than the outside.

Coins- The Yaudheyas and Malavas were significant *Ganas,* or republic states, in ancient India, as can be shown from the coins that are currently available. Both monarchy and republics coexisted and thrived in ancient India.

Ancient India's Republics' Names

Buddhist texts provide us with information about the 6th century BC republics. The following were these republics (Raychaudhuri, 2022).

Kapilavastu's Shakyas- It was situated in the Himalayan foothills on the Nepali border. This republic was situated in what is now Gorakhpur's western region. In this state, Gautam Buddha was born. Kapilavastu served as its capital. The local population believed that they were descended from Eshvak. This was a significant learning location.

Allakappa Bulis - This region was situated between what are now the districts of Muzaffarpur and Shahabad. Dhammapada claimed that this region was located close to Veth Island.

Kesputta Kalamas - Aalar Kalam, the spiritual mentor of Buddha, was a member of this dynasty. Shatpath Brahman describes this dynasty as being linked to the Panchal Keshis.

Susamagiri Bhaggas - Sanyutta Nikaya claimed that this region was located in Bhargadisa. Modern-day Mirzapur is near this location.

Ramgram's Kolis – Found towards East of the Shakyas of Kapilavastu

Pava's Mallas - The Vashistha gotra's kshatriyas governed this dynasty. The Mallas made their home in what is now Padrauna, Uttar Pradesh.

Kushinagar Mallas - They were Mallas' second branch. Here, Buddha achieved *Parinirvanna.*

Pippalivan Moris - Mahavansa claims that the Shakyas were the previous name for the Moris. But because of the violence of Vidudabh, they later moved to a steep part of the Himalayas, where they founded the city of Pippalivan. This city has long been known for its peacock sounds, earning it the nickname 'Moris'.

Mithila's Videhas - Mithila was a well-known educational facility.

Vaishali's Licchavis - The Kshatriya clan was the home of the Licchavis.

Vaishali's Naga - The federation of Vajji was established as a result of the union of the Videhas and the Licchavis. Additionally, there was a Licchavis and Nagas federation known as Asthakul, which included Videhas, Yangyik, Licchavi, and Vajji.

Thus, the Shakya, Licchavi, Videha, Vajji, and Malla were among the strong republics of this era. The meaning of republic and federation, according to D. R. Bhandarkar, an expert on Indian ancient history from 650 to 325 BC, was "a group of well-decided and well-organised men"(N. Sharma, Mohanty, J.T. Sharma & Vaiphei, 2015, p. 33) Nonetheless, it appears that a republic was the common name for a federation unit. A federation was formed by many republics. As a result, numerous *grihas* created a *kul*, and a group of kulas established a republic.

Republics in *Mahabharata* Period

Mahabharata's Shanti Parva discusses *Ganas,* or republics, and how they are run. Resolution piloting, passing, and execution were the responsibilities of the governing bodies of each republic, which were composed of *Gana Mukhya* and *Pradhana*. In addition, the executive branch was tasked with ensuring that the *Nyaya Vyavastha,* was efficient and inexpensive, and that the laws were explicit and unambiguous. According to *Mahabharata*, all state policy issues were brought before the assembly for thorough discussion, and choices were then made to put them into effect. The *Mahabharata* leads us to conclude that *Gana* was unable to keep secrets and that jealousy and greed had grown among its members. According to the *Mahabharata*, it was proof of jealousy that brought them to ruin in the sight of the populace. Even spies were used to learn the secrets of *Gana* members. It also seems that the idea of confederacy and *Ganas* banding together to accomplish shared goals was widely recognized and

popular. One of the qualities of a good republic, according to the *Mahabharata*, is that its citizens must be honest and upright. A spirit of discipline and an appreciation for other people's perspectives are also inevitable. These are bound to work in the spirit of give and take and modification.

In all cases, the republics maintained their independence and never submitted to higher powers. The *Gannas* were extremely picky about the security of their lands and the stability of their finances, and the courageous were always treated with respect. The republic always regarded the intelligent and able as a valuable resource, and every effort was made to treat them with the respect they deserved. Internal conflicts had to be reconciled as much as possible because they were inherently incompatible with national security (Myneni, 2016, p. 72).

The republics acknowledged one another's sovereignty and loved and respected one another. They constantly aimed to ensure that the people paid the least amount of taxes, but they also made sure that republics' finances were never allowed to falter. Every member of a *Gana* was supposed to be a valiant warrior who was always prepared to protect their homeland.

Each and every *Gana* member gives their all in support of the country's progress. They made sure that the administration operated in accordance with *dharma* and valued justice. However, the literature of the *Mahabharata* also suggests that the internal management of these *Ganas* was so inadequate that occasionally the enemy took full advantage of it and was able to overthrow a republic in a short period of time. "The *ganas* of *Mahabharata* period fall at once into the clutches of the enemy when driven by anger, absence of mutual confidence, military violence, tyranny, oppression and executions" (Myneni, 2016, p. 73).

The Republics' Administrative System

At that time, the states had different systems of government. *Samarajya, Bhojya, Swarajya, Vairajya,* and *Rajya* are the five categories of administrative polities that *Atreya Brahman* has described as follows:

Under *Samarajya* politics, the head of state was referred to as Samrat, his position was hereditary, and his coronation was required. These states had greater chances to increase their territory. The area under cultivation and agricultural output rose as a result of iron utilization. Since he was the only one

with the authority to allow the clearing of forests and his part of the produce was set, the monarch benefited the most from it. The monarch once more benefited from greater trade and commerce brought forth by increased agricultural production. All of this led to the emperor's material success, which enabled him to build up his army and effectively use it to expand his empire's lands (Sharma, 2015, p. 33).

Bhoja, the head of state in the *Bhojya* polity, was given administrative authority for a set amount of time rather than having a hereditary position. The *Satvava Yadavas* also had a system of government like this. The Samrat was the head of state in *Swarajya* politics, and a few esteemed Kulas, who were all considered equals, were in charge of running the government. The king was the head of state in *Vairajya* politics. Additionally, the representatives of the people selected many administrative officers. Tribal administration persisted in Rajya polity. This method was followed by the *Janpadas* of Kuru and Panchal in Madhyadesh.

Key Characteristics of Ancient Indian Republics or *Ganas*

In the past, monarchy and the Republican or Gana style of government coexisted in ancient India. There were republics all around the nation. The institution of Gana was ancient and ingrained in Hindu politics. The Republic or Gana system's key characteristics are as follows:

The New Republics' Formation Process

Generally speaking, Gana, or republic, was established in the name of a person or location. Disruption of the old and existing republics and a preference for the form of government over anarchies were two factors in the establishment of new republics. States like Kurus, Panchalas, and Videhas only transitioned from monarchy to republic later on.

King

The king served as the state's supreme executive. He was chosen as a member. He lacked total authority.

Council of Ministers

The council of ministers consisted of nine members, all of whom were chosen from among the nobles. Nonetheless, we discover that the Malla republic had

four members, the Licchavi republic had nine, and the Videha republic had eighteen.

Executive Organisation

The Sansthagar was another name for the executive. The Licchavis believed that they were kings. Voting was done in cases where there were disputes over war, peace, religion, or social issues. If a consensus could not be reached for any reason, a committee known as Udayvahika was constituted.

The Voting Procedure

For the purpose of voting, four methods were employed. They are as follows: The Secret System wherin voting was conducted in secret using this method, the Open System wherein voting was conducted in an open manner using this method, the Mouth-to-Ear Mechanism, in which voters whisper their preferences into their ears to cast their ballots (Sharma, 2015, p. 34) and the Evident System wherein the voter names were clearly announced using this system.

The Organization's Working Procedure

The following was the working procedure:

• Organisational norms were established for the proposal. Usually, after three iterations, the idea was accepted if no objections were raised. However, special regulations were in place to put the idea to a vote if it was opposed. Voting took place in secret.

- To settle disputes and questions, committees were established.
- There were created complementary rules. (Sharma, 2015).

The *Gana* or Republic's Election System

The aristocratic class held all the power in the ancient Indian *Gana* system, but not all of the populace. This class of people, known as the *"rajas,"* typically made decisions on all significant issues, including peace and war. Although their numbers typically ranged from 3,000 to 7,500, they were rather numerous, with some *Ganas* having more than 7,500. These Ganas did not adhere to the adult franchise system. Some historians believe that there were no republics in ancient India since the head of state was not elected democratically. But this

doesn't seem to be the case.

> However, as Altekar has noted, a state still qualifies as a republic even if it was not democratic in the contemporary sense. "Aristocracies, democracies, and 'oligarchies' have all been referred to as republics," he admits. Therefore, it is safe to state that, in contrast to monarchs, authority was not concentrated in the hands of one person in the *Gana,* or Republics of ancient India. (Myneni, 2016, p. 68)

Discussions in Republics or *Ganas*

There were both large and minor states of Gana, or kingdoms, in ancient India. In the past, the citizens of minor states had a common residence. Social and political gatherings took place in a hall or another public space. There were privileged and non-privileged classes in the society. The members typically came from wealthy families that made nearly all of the decisions. Typically, they reached a unanimous decision. Additionally, it seems that when members disagreed, the majority vote method was used to decide the matter.

The Assembly's officer assigned seats to everyone who was eligible to enter the Assembly Hall. Although it's unclear if prior notification was always necessary, members did make motions to address certain resolutions. Occasionally, we also discover that a decision had to be approved three times before its outcome was finalized. Every meeting had a specific quorum, which was rigorously adhered to. Without a quorum, meetings were deemed unlawful and void.

The authority to hold deliberations was given to a committee that took appropriate measures to prevent such an undesirable circumstance since it seems that occasionally stupid speeches were made or that a Raja would like to make such a speech. It has always been believed that a member should be given every opportunity to voice his opinions when doing so in a proper and acceptable manner.

Once the questions were resolved, they were typically not reopened unless the *Gana* or *Samgha* pointed out and approved a procedural flaw. Every member was self-respecting and did not think of himself as being any less than the others. Allocating seats, rejecting a motion, resolving a contentious issue, or regulating and controlling the discussions were therefore an extremely challenging and intricate process. Even though he tried his best to maintain equilibrium, the

presiding officer typically failed to satisfy everyone.

The Assembly's discussions were open, honest, and free from outside influence. Members frequently differed greatly from one another, and disputes were frequent. There is evidence that the people thought that they could only be destroyed by internal forces rather than external ones. Since the *Ganas* people grumbled that there was no national secrecy and that the adversary might know about their plans and preparations far in advance, one may picture the extent of unrestricted talk.

The Central Assembly

A republic's Central Assembly, which ranged in strength from 3,000 to 7,000, was its supreme body. No meaningful business could be undertaken in the Central Assembly due to its size. It was only reasonable to be crowded because everyone in the *Gana* had the right to participate.

The assemblies there also seem to be strong enough bodies, and their numbers were not diminished in the slightest. These not only appointed their battle commanders but also had authority over international policy in addition to internal governance. The executive was under its supervision and might be asked to justify its actions. There were good reasons to think that the Assembly had given its previous permission before the governors were appointed. The Assembly was also in charge of the national budget. It is obvious that the Assembly could not stand any kind of extravagant or undesired spending or misappropriation of finances. All taxes were approved, and all expenses were permitted.

Group or Party System

Supporting and opposing parties or groups were a divisive mechanism used in ancient Indian republics. Every organisation or party had a leader, but they all saw themselves as equals and didn't like to be led by others. Altekar claims that the party system is so prevalent in the republic that even Grammarians mention it. The term *dvandva* was used to describe the competing parties and the term *Kyutikromana* to their rivalry. The technical words *Vargya, Grihya,* and *Pakshya* were used to identify members of the party. No electoral lists were available for voting, no assembly election procedure was specified, and there were no requirements for being eligible to vote. Thus, groups were formed

according to the distribution of votes, discussions, and significant issues. An assembly that regularly used voting before reaching a conclusion was ideal. Internal harmony was preserved, and the president's job became relatively simple in such an assembly (Myneni, 2016, p. 70).

Record of Deliberations

Every significant discussion and decision made in the Assembly was carefully documented. Someone with a specific role may have been in charge of keeping track of them. These documents served as the foundation for the assembly's quorum-required work and the legislative branch's accountability to the executive. The president had an extremely challenging and complex duty. Departments such as Foreign Affairs, Treasury, Justice, Police, Trade, Industry, and others were in charge of running and overseeing the republic. According to Altekar,

> The different departments had their own officers of diverse grades, who must have worked under the orders of the Ministers. In small states like those of the Sankya and Loliyas, they could directly report unusual incidents to the supreme authorities, in bigger states, they must have reported through proper channels. (Altekar, 1949, p. 77)

Judicial Administration of the *Ganas* or Republics

There were seven different kinds of courts. The king served as the judiciary's chief justice. Aristocrats presided over what were known as *kula* courts, which were law courts. Additionally, it seems that a jury system was in place and was employed to look into criminal cases. The *Gana* court heard appeals from the *Kula court*. Furthermore, guilds known as *Pugas* possessed some judicial authority. The head of the *Gana*, or republic, served as the last court of appeal. Jayaswal says that,

> the Gana had their own laws is evident from the provision of the Hindu law books which recognize their separate existence. It is also proved by the testimony of Greek writers who praise the laws of Indian Republics. The Lichchhavis are recorded to have a book of legal precedents. (2021, p. 77)

Advantages of the Republican System

The following were the main advantages of the republics system:

- The king lacked absolute authority.
- Every citizen participated equally in the republics' administrative tasks.
- Voting protected the social norms.
- There was no hereditary influence. Even if he had a low social standing, the main attributes that were desired in a leader were honesty, responsibility, and experience.
- In times of conflict, the entire state fought together to defend its republic's idols.
- There was prosperity in terms of money. The major hubs of civilisation, art, and culture were the modern states.

Drawbacks of the Republican System The following were the drawbacks of the republican system:

- Security was impeded because of arguments that made it impossible to keep important issues private.
- There were delays as a result of the delayed decision-making process.
- Individual interests began to influence politics.
- The notion of equality caused administrative skill and tactfulness flaws to be overlooked.
- This system reduced significant costs.
- Political parties interfered in the day-to-day management of governmental affairs.
- Regional and economic leadership was lacking.

Reasons for the declines of *Ganas* or Republics

Republics were destroyed for the main reasons listed below:

A Lack of Equality

The people of ancient India were extremely familiar with *Ganas*, or republics, which coexisted with monarchy for generations. In actuality, republics had great respect, status, and glory prior to the year 500 A.D. However, these republics

vanished as time went on. Both the Guptas and the Mauryas discovered strong republics. Republics suffered a severe blow when the imperial Guptas came to power, solidifying their dominance over other republics (Myneni, 2016, p. 72).

Hereditary System of Succession However, according to Altekar, the hereditary system of succession gained popularity over the elected one over time and thus undermined the fundamental tenets of republicanism.

The Monarchy's Popularity

With the growing popularity of the Divine Origin of King thesis, the importance of an elected president started to be undervalued. A monarch, who was considered to have enjoyed God's blessings, was given all the credit and success, while an elected leader was held accountable for all the failings.

Inadequate Administration Secrecy

Monarchies guaranteed confidentiality and promptness, eliminated the prospect of internal conflicts and quarrels, which were hallmarks of republican systems, and prevented the concealment of administration that existed in republics.

Lack of Prosperity and Security

Monarchies eliminated the primary internal threat to republics, and its citizens were regarded as safer, more secure, and more prosperous than those of republics.

Insufficiently Large Army

Due to their inability to sustain sizable armies, the republics were unable to contend with the formidable Guptas and the semi-civilized Huns, who possessed strong military forces.

Excessive Individual Freedom

The *Ganas* had too much personal freedom, and at the same time, there were rifts, and the *Ganas* grew weaker and smaller.

Conclusion

The preceding discussion suggest that democracies can become oligarchies, aristocracies, monarchies, or dictatorships if their citizens become lazy, sluggish, and uninterested. In such cases, powerful individuals who are vigilant

and proactive take control of the state. Republics vanished, yet their influence on ancient India's political history endured. Hindu republics, like other human institutions, had its share of positives and problems. A strong sense of "justice" and "discipline" characterized Hindu republics. There was equality in the *Gana*. Republican regimes were successful both militarily and politically. Hindu states were extremely wealthy. They always had plenty in their treasury. This polity's very flaw was its small size. Intrigues also befell the republics, and *Ganas* were broken as a result of disagreements. The longevity that the State system can guarantee is the strongest indicator of its success. As a class, the Indian republican system excelled in ensuring permanence. For over 1,000 years, Malavas lived in freedom as did the Yaudheyas and the Licchavis. In this way, the tenets that guided the Hindu republics' existence endured. Many republican states were eager to defend freedom and were passionate about it. They had good administration and were wealthy. The Hindu republics' richness and early democratic traditions are highly regarded in both domestic and international history. The *Mahabharata* also attests to the fact that the Greeks were aware of their wealth.

The term 'republic' is actually defined scientifically and precisely in the *Mahabharata* by referring to the entire political community, the entire body politic, or alternatively, the parliament, rather than just the ruling body. The idea of *'Gana-rajya'* was prevalent not just during the Buddhist era, which was preceded by the Vedic tradition and institutionalized in Sabhas and Samitis, which are the equivalent of councils and assemblies, but also in the decades that followed. The Greek framework of idealism, which saw society as an organic wholeness whose rights went beyond those of the individual, had a striking connection to Hindu thinking. Indeed, republican enthusiasm and a sense of belonging permeated all aspect of society, including trade, religion, agriculture, and the service sector. At the end, it is sufficient to say that Ancient Indian politics were significantly and permanently impacted by democratic principles.

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Himachal Pradesh's Climate Policy: Aligning with the Paris Agreement 2015

Riya Parashar

Abstract

The combined impact of over-population, misuse of natural resources and unsustainable farming practices has made the Himalayan ecosystem fragile. Climate change has led to increase in temperature affecting the weather-cycle with abrupt rainfall patterns, the delayed winter and the harsher summer. The variations brought upon by climate change in Himachal Pradesh is of particular significance as the economy of the state relies heavily on agriculture, horticulture and forestry. All these sectors are facing the consequences of climate change, putting the economy and people of the state in a flux. Himachal Pradesh has frequently experienced natural disasters such as floods, droughts and cloud bursts which has led to biodiversity loss and lower harvest resulting into poverty and deprivation. Nearly 63% of the workforce in the state relies on agriculture or horticulture for their livelihoods, making rural communities especially vulnerable to extreme weather events. The article delves into key initiatives, schemes, and policies undertaken by the Himachal Pradesh government, particularly since 2010, to address climate change and promote sustainable living. It also critically examines and evaluates the extent to which these policies align with the objectives of the Paris Agreement within the broader framework of the Sustainable Development Goals.

Keywords: *Climate Change, Global Warming, Environment, Paris Agreement and Kyoto Protocol*

Introduction

Known for its mountain ranges such as the Shivalik, the Lesser Himalayas and the Great Himalayas, the state of Himachal Pradesh is located in the northern part of India. Having picturesque mountainous landscapes and varied climate, the state also boasts diverse range of flora, fauna and bio-diverse ecosystem. Bordering with Jammu and Kashmir to the north and Punjab to the west, the state also shares its boundaries with Haryana to the south-west, Uttarakhand to the south-east, and the Tibetan region to the east. The physical geography of the state is dominated by high hills as well as deep valleys. Located in the fragile Himalayan eco-system which is readily susceptible to global climate change, Himachal Pradesh's climate change concerns get further aggravated by reckless deforestation, rapid urbanization, and neglect of its forests and ecosystems. The state recorded the sharpest increase in average temperature in India between 1951 and 2010 (Rathore, Attri & Jaswal, 2013). The widespread concerns around the climate-change and its multi-faceted impacts have prompted the state government of Himachal Pradesh, particularly in the last fifteen years, to formulate and implement several policies to combat the challenges of climate change. This has led to the implementation of policies such as Himachal Pradesh State Action Plan on Climate Change (HP-SAPCC) and the Climate Resilient Sustainable Agriculture Project (CRSAP) (NITI Aayog, 2017), both aimed at addressing climate-related challenges, especially in agriculture.

The impact of climate change has been broader, ranging from reduced agricultural productivity for farmers to the frequent landslides that have resulted in significant loss of human lives and property (Kaur, Kaur, Tiwana, & Gupta, 2022). As climate change has affected all facets of human, animals and plants lives, the formulated policies have been layered and intricate, providing remedial measures for all the domains. The policies focus on cutting carbon emissions, encouraging the use of renewable energy, promoting sustainable farming for better land management, protecting biodiversity, and strengthening climate resilience. Central to this framework are the Himachal Pradesh Climate Change Policy from 2013 and the action plans that follow (Upgupta, Sharma, Jayaraman, Kumar, & Ravindranath, 2015). These plans outline specific strategies for both mitigation and adaptation (Rawal, Antany, Kumar, Pottakkal, & Linda, 2025). The government has prioritized broad involvement of citizens

and civil society groups, working alongside state institutions to achieve lasting outcomes. It also requires the active engagement of research institutes to design innovative strategies and policies that can help restore the environment to its fullest potential (Baloch, 2025).

The state's economy relies heavily on sectors such as hydropower generation, horticulture, agriculture, forestry, and tourism, all of which are considered vulnerable under the current climate change scenario. Any disruption in these sectors due to climate change is highly likely to have far-reaching impacts, not only for people living in the mountainous hilly areas but also for those living down below in the plains (Department of Environment, Science and Technology, Government of Himachal Pradesh, 2012). With summer temperatures seldom exceeding 25–30 °C and harsh winters, the region's socio-economic activities, primarily agriculture and tourism, are vulnerable to resource scarcity as a result of climate change Consequently, the state formulated a Climate Policy to address these pressing concerns. (Kumari et al., 2023). Himachal Pradesh's Climate Challenge and Sectoral Impacts document meticulously examines the intricate nexus between the region's environmental fragility and the manifold repercussions of climate change across critical sectors. By focusing attention on immediate risks, it lays the groundwork for formulating suitable resilience strategies.

By aligning with national and global climate endeavors, Himachal Pradesh aims to navigate the challenges posed by a changing climate, to safeguard its ecological heritage, and foster sustainable socioeconomic development. This study aims to analyze the causal factors driving climatic shifts in Himachal Pradesh, explore the extant climate policies implemented by the state, and assess their conformity with the objectives outlined in the 2015 Paris Agreement, a seminal international agreement combatting climate change (Chaudhry, Mukhopadhyay, & Guin, 2025).

Material and Methods

The methodology employed to assess Himachal Pradesh's climate challenges and sectoral impacts entailed a comprehensive approach, integrating various elements, such as the analysis of climatic data, scientific research, stakeholder consultations, and policy reviews. The data presented in this study predominantly originated from authoritative government sources.

Within the framework of understanding climate variability in Himachal Pradesh, this study was meticulously designed to ascertain the overall ramifications of fluctuations in climatic parameters, particularly temperature and rainfall, on agricultural crop productivity. By employing a synthesis of quantitative and qualitative methodologies, the document amalgamated diverse information sources to discern vulnerabilities, delineate the impacts on key sectors, and evaluate existing initiatives. This holistic methodology served as the foundation for formulating strategic recommendations and guiding the policy directions delineated in the analysis.

State of Environment Report-2022

The Department of Environment, Science & Technology of the Government of Himachal Pradesh revised and published the State of Environment Report (SoER) 2022, encompassing a wide array of sectors, including physiography, agriculture, horticulture, biodiversity, energy, land use, forest, health, industry and mining, tourism and culture, transport, water resources, environmental pollution and management, society and environment, and natural disasters. The SoER aligns with the framework established by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, based on the pressure, state, impact, and response (PSIR) model. This comprehensive report was unveiled to coincide with World Environment Day on June 5, 2022 (Eco-Survey-2022-23 - Economic & Statistics Department, HP, India).

Climate Change Challenges in Himachal Pradesh

Himachal Pradesh faces a multitude of climate change challenges, including glacial retreat, unpredictable and sporadic rainfall patterns (Kumar et al., 2025), landslides, forest fires, and a heightened frequency of extreme weather events. An earlier study documented changes across various glaciers in the Bhaga Basin within the Himachal Pradesh from 1979 to 2017 (Kaushik et al., 2020). Utilizing Landsat satellite imagery, the authors observed variations in the glacier extent across different elevation zones (Yousuf, Shukla, Garg, & Bangroo, 2025), notable snout retreat, and decadal alterations. Their findings underscored the alarming rate of glacier retreat, averaging 12m annually, with an accelerated recession observed at lower elevations and smaller glaciers.

According to the Indian Meteorological Department, in 2023, Himachal

Pradesh has witnessed abrupt changes in climate patterns with drastic and sporadic snowfall, rainfall, and significant changes in temperature. Owing to extreme climate changes in 2023, Himachal Pradesh witnessed a 20% surplus in rainfall (Lohan, Kumar, Singh, Gupta, & Tiwari, 2025).

Figure 1

Anomalies in climate of Himachal Pradesh in 2023 (Himachal Headlines, 2024).

Rainfall	884.8mm
Landslides	168
Cloudburst	52
Flash floods	72
Precipitation (Deficit)	-85 %

Moreover, analysis of long-term statistical data revealed a decreasing trend in annual precipitation (-2.724 mm per year, 1951–2017), alongside a concurrent rise in mean annual temperature (0.021°C per year).

The agricultural landscape in the Himalayan region has undergone a transformative shift from traditional cereal crops to cash crops, such as fruits and vegetables. This transition is intricately linked with seasonal climatic variables, including minimum and maximum temperatures, diurnal temperature ranges, and rainfall patterns, which directly affect the state's agricultural sector. Given that approximately 71% of Himachal Pradesh's 7.80 million residents rely on agriculture (Shah & Vijayshankar, 2021) for income and employment, they are disproportionately affected by climate-induced variations within the sector. Studies have shown that even a small increase in temperature during the Rabi season can greatly lower crop yields. Wheat production can drop by as much as 10% with a 1°C rise in maximum temperature and by 6% with the same increase in minimum temperature (Singh & Sharma, 2018).

These climate challenges have significant effects on the state and its people. Sharp fluctuations in temperature and humidity negatively influence land use patterns tied to agriculture and animal husbandry. Since crop and livestock management are highly dependent on weather conditions, extreme variations—

particularly in the heat-prone districts of Solan, Una, and Bilaspur—could lead to reduced agricultural and livestock productivity. This decline would likely affect the per capita income of the state's residents. Additionally, increased out-of-pocket spending on climate-induced health issues may emerge as a significant challenge. In turn, this would reduce the available labour hours necessary for ensuring food security and proper nutrition. Consequently, such a chain of impacts could severely strain the livelihoods and well-being of people in the affected areas (Ministry of Health and Family Welfare, Government of Himachal Pradesh, 2022).

Proactive Measures in Himachal Pradesh's Climate Policy

Himachal Pradesh was among the earliest states in India to formulate its own Climate Change Policy in 2008, even before the central government issued guidelines for State Action Plans on Climate Change in 2009. This policy largely emphasized creating a pathway to secure carbon credit benefits through the Clean Development Mechanism (CDM). Significantly, Himachal Pradesh became the first state in the country to sell carbon credits from community lands under the UNFCCC's CDM framework. It also emerged as one of the pioneers in adopting a carbon-neutral state policy (Department of Environment, Science and Technology, Government of Himachal Pradesh, 2015). The state's forward-looking approach is further reflected in its proposed 'State Action Plan on Climate Change and Human Health (SAPCCHH)', which envisions a comprehensive strategy to tackle health challenges linked to climate change. The plan aims to safeguard public health—particularly that of vulnerable groups such as children, women, and marginalized communities—against climate-sensitive illnesses. Its broader goals include reducing morbidity, mortality, injuries, and overall health risks caused by climate variability and extreme weather events, while also enhancing the resilience and capacity of healthcare services to address these emerging threats.

Paris Agreement

The Paris Agreement, which was signed on the Paris Agreement on 12 December 2015, is an important milestone in the global effort to fight climate change. Signed under the United Nations Framework Convention on Climate Change (UNFCCC), the agreement committed to keeping the rise in global average temperature well below 2 °C above pre-industrial levels, while striving to limit

it to 1.5 °C, recognizing that this would greatly reduce the risks and impacts of climate change (UNFCC, 2016). Prior to the Paris Agreement, the Kyoto Protocol was the primary international climate treaty, establishing binding emission reduction targets for developed industrialized countries and the European Union. Adopted in 1997, it reinforced the principle of "common but differentiated responsibilities" obligating developed nations to cut greenhouse gas (GHG) emissions, while transitional and developing economies were not bound by treaty commitments. Under the Protocol, industrialized countries collectively pledged to reduce GHG emissions by an average of five percent between 2009 and 2012 compared to 1990 levels. The agreement emphasized domestic emission reductions but also offered flexibility through market-based mechanisms, including carbon trading and joint implementation projects, to help countries meet their targets (Safari, 2024).

Nationally Determined Contributions (NDCs) are central to the Paris Agreement, which was adopted at COP21 in 2015. The Agreement commits countries to limit global warming to well below 2 °C above pre-industrial levels and to actively pursue efforts to restrict the temperature rise to 1.5 °C. It is legally binding and operates on a five-year cycle, requiring countries to submit progressively more ambitious climate action plans. This iterative process is known as the "ratchet mechanism", where nations gradually strengthen their commitments over time to achieve the long-term goal of net-zero emissions by 2050. Each NDC outlines a country's specific commitments to reduce greenhouse gas (GHG) emissions, including concrete targets, adaptation measures, implementation strategies, and timelines for achieving these goals. They are tailored to the unique circumstances, capabilities, and priorities of each nation, reflecting the principle that climate action must account for differences in national contexts while contributing to the global effort to combat climate change (World Economic Forum, 2015).

India has committed to reducing its GDP's emissions intensity by 33–35% by 2030 compared to 2005 levels under the terms of the Paris Climate Agreement. As per its INDC, by 2030, 40% of installed electricity capacity must come from non-fossil fuel-based energy sources. Further, India aims to establish an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through forest and tree cover by 2030. Adaptation forms an integral part of India's INDC, to be addressed by enhancing investments in development programs

for sectors most vulnerable to climate change, including agriculture, water resources, Himalayan and coastal regions, health, and disaster management. Acknowledging existing resource gaps, India plans to mobilize extra funding from domestic and developed country sources to implement mitigation and adaptation measures. It also intends to strengthen capacities, develop a domestic framework, and leverage international mechanisms for rapid dissemination of climate technologies, along with establishing joint collaborative research and development facilities for future technologies (Gupta & Gupta, 2016).

Himachal Pradesh's Climate Policy

The Government of India has introduced several initiatives to tackle the impacts of climate change, including the National Action Plan on Climate Change (NAPCC), the National Adaptation Fund on Climate Change (NAFCC), the Climate Change Action Programme (CCAP), and the State Action Plan on Climate Change (SAPCC), all aimed at addressing climate concerns at the national level. One of the NAPCC's most creative initiatives to address ecological issues in the Himalayas is the National Mission for Sustaining the Himalayan Ecosystem (NMSHE). The government has also started a number of initiatives aimed at ensuring the sustainability of the Himalayan ecosystem, including the National Mission on Himalayan Studies (NMHS), the Indian Himalayas Climate Adaptation Programme (IHCAP), the Climate Change Adaptation Project (CCAP), the Hill Area Development Programme (HADP), and Governance for Sustaining Himalayan Ecosystem (G-SHE). When taken as a whole, these programs support climate change adaptation and mitigation strategies (Kaur, Kaur, Tiwana & Gupta, 2022)

In addition to the above-mentioned Centre's policies, schemes and initiatives, the state government of Himachal Pradesh has also launched some important projects such as Himachal Pradesh State Action Plan on Climate Change (HP-SAPCC) and the Climate Resilient Sustainable Agriculture Project (CRSAP), as well as key initiatives such as Carbon Neutral Policy. These projects aim to tackle climate challenges, especially in agriculture. Himachal Pradesh takes a proactive approach to climate change by focusing on sustainable development. This includes initiatives that promote renewable energy, afforestation, sustainable agriculture, waste management (Jasrotia, Maheshwari, Ngelambong, & Singh, 2025), and water conservation measures.

While Himachal Pradesh has various departmental policies covering industries, mining, forests, tourism, and power, it currently does not have a separate Environmental Policy. However, the state has developed environmental policy guidelines to encourage sustainable practices. Although these policies provide safeguards and regulations for ecological issues, gaps remain that need addressing to promote sustainable development effectively. Himachal Pradesh emphasizes the need for humane, ecologically friendly, and sustainable development. The state has set ambitious targets to become a 'Green State' by 2025, aiming to meet 100 percent of its energy needs through renewable sources. Projects like adding 150 megawatts of solar capacity aim to significantly reduce greenhouse gas emissions and strengthen the state's commitment to environmental sustainability - India: World Bank Approves $200 Million to Increase Renewable Energy Penetration in Himachal Pradesh, 2023 (Singh & Kumari, 2024).

Furthermore, Himachal Pradesh's vast potential for hydroelectricity underscores its capacity to generate surpluses for sale, thereby reducing reliance on traditional fuelwood sources and alleviating pressure on forest resources. Leveraging non-conventional sources and technologies, such as solar passive housing, further underscores the state's proactive approach towards achieving sustainability.

Solar Energy Program

The establishment of the Himachal Pradesh Solar Energy Program is a crucial element of the state's strategic energy plans aimed at harnessing the immense potential of solar energy. As part of a broader objective, this program underscores the state's dedication to sustainable growth and the transition towards renewable energy sources. In alignment with India's aim of achieving 100 GW of solar power (Hairat & Ghosh, 2017), the program contributes to the national goal. The state's efforts also emphasize the vital role of regional contributions in fulfilling India's pledge to increase its renewable energy capacity and mitigate the effects of climate change globally. The State Government has successfully completed the process of setting up ten demonstration Municipal Solid Waste management facilities as pilot projects under the National Mission for Himalayan Studies scheme, with a budget of 4.48 crores sanctioned by the Ministry of Environment (Singh et al., 2023), Forest and Climate Change,

Government of India.

National Adaptation Fund for Climate Change (NAFCC)

The state government has undertaken a project in the drought-prone areas of three developmental blocks in the Sirmaur district, investing 20.00 crore under the National Adaptation Fund for Climate Change (NAFCC) (Prasad & Sud, 2019). The primary objectives of this program were to reduce the vulnerability of rural small and marginal farmers, including women, to climate- related issues and enhance their adaptive capacity. Moreover, the program aimed to improve food security and provide better livelihood options to increase resilience. The state has also effectively completed a training program for 30,880 farmers on climate change adaptation in drought-prone areas of the Sirmaur district (Rani, 2023). The project's achievements were showcased at the 27th Conference of the Parties (COP-27) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Egypt from November 6, 2022, to November 18, 2022 (Muigua, 2023).

In addition, the Department of Environment, Science, and Technology, Himachal Pradesh, has established a State Knowledge Cell on Climate Change (KCCC) under the National Mission for Sustaining Himalayan Ecosystems (NMSHE) with a funding of 1.12 crore from the Government of India. The KCCC aims to create a comprehensive database of geological, hydrological, ecological, social, cultural, and traditional ecosystem preservation and conservation information. This database will enable monitoring and analyzing data to develop a knowledge base for climate change policies. The KCCC has prepared Climate Change Vulnerability Assessment and Adaptation Plans for Kinnaur and Lahaul-Spiti districts, and plans for Shimla, Kullu, and Mandi are in progress (Anjanappa, 2024).

Plastic Waste Management

The state government of Himachal Pradesh prohibited the use and disposal of plastic items through the Himachal Pradesh Non-Biodegradable Garbage (Control) Act, 1995 (Dadwal & Singh, 2023). During the fiscal year 2022-23, a total of 1,224 violators were fined 13.50 lakh. (Government of India Ministry of Environment, 2023). The Act bans polythene bags, plastic cutlery, and single-use plastic spoons, stirring sticks, forks, knives, and straws in the state (Siddiqui

& Pandey, 2013). In the same year, 42.17 lakh was paid to households and registered rag pickers for purchasing 29,965 kg of specified plastic waste at 75 per kg under the Buy-back Policy for non-recyclable plastic waste (Briassoulis, Pikasi, & Hiskakis, 2019). The state government has also established Special Task Forces at the state level under the Chief Secretary to take measures in mission mode to eliminate single-use plastic (Singh & Biswas, 2023).

Figure 12

Fund Release for Implementation of Projects in HP State Under National Adaptation Fund on Climate Change (Mishra et al., 2019)

YEAR	FUNDS	RELEASED TO
2015-2016	100.000.000 ₹	NABARD
2018-2019	50.000.000 ₹	NABARD
2019-2020	46.907.812 ₹	NABARD

Conclusion

The formulation of Himachal Pradesh's SAPCC represents an important advancement in the state's climate strategy, reflecting a deep understanding of both the environmental and socio-economic dimensions of climate change. The plan's shift toward decentralized governance, diversification of renewable energy, and community-led adaptation highlights a forward-looking and inclusive approach to building climate resilience. Grounded in relevant social science principles such as climate adaptation, sustainability, and participatory governance, the SAPCC exemplifies how state-level climate policies can promote sustainable development and social equity.

Furthermore, SCCCs (State Climate Change Cells) (Kumar & Mohanasundari, 2025) have been established in 13 states to promote climate change adaptation and mitigation efforts, including Madhya Pradesh, Punjab, Chhattisgarh, Karnataka, Kerala. While Himachal Pradesh may not have an Environmental Policy of its own, these steps taken by the state government demonstrate their commitment to aligning with the targets set in the Paris Agreement. However, to ensure effective implementation and long-term success, the state government must continue to monitor and evaluate the policy's outcomes while considering

the socio-economic factors of the region (Sharma et al., 2025).

However, addressing the remaining challenges—particularly financing, gender inclusivity, and effective implementation at the local level—will be crucial for realizing the plan's full potential. By focusing on these areas, Himachal Pradesh has the golden opportunity to serve as a model for climate resilience and social adaptation not only for India's mountainous regions but also beyond.

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