A Legal Framework for Artificial Intelligence in Wildlife Conservation in India - The Desideratum of the Decade

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Abstract. There has been an accelerating diversification of the Indian wildlife, precipitating a pressing demand for the introduction and formation of certain preservation strategies, not reactive but structurally anticipatory. The evolving paradigm of the utility of artificial intelligence has emerged as a rather transformative modality known for reshaping the contours of the law and policy of conservation. Being initially deployed for rudimentary monitoring, certain artificial technologies have transpired into rather sophisticated in terms of applications encompassing predictive analytics, behavioural mapping and ecological modelling, along with developmental catalysts by the increasing financial investments and the granular categorization of monitoring objectives across the subcontinent of Bharat. Contrarily, this form of technological proliferation exposes a critical lacuna in the Indian legal architecture, wherefore the absence of a dedicated statutory framework that is capable of regulating the deployment and the employment of artificial intelligence in wildlife conservation. The unregulated expansion of artificial intelligence in this domain has a risk of both overreaching as well as under protecting, underscoring the necessity of a statutory framework to ensure the boundaries of application of artificial intelligence in the process of wildlife conservation. This doctrinal study aims to contend as to the reasons for India ought to adopt a rather comprehensive legal framework to govern the utility of artificial intelligence within the broad trajectory of conservation law, The study would further interrogate the normative and imperatives of regulation, delineating the substantive and procedural dimensions that a prospective statute ought to encompass, which would include the safeguards against a form of algorithmic opacity, mechanisms for data governance, along with the provisions for the juxtaposing ecological imperatives, along with the technological innovations. .

Keywords: Wildlife, Conservation, Artificial Intelligence, Statutory, Framework

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1 The legal framework for wildlife conservation in Bharat – a critical analysis

Bharat is considered as one of the most biodiverse lands of the world being the home to 8 per cent of all known species. The country`s varied landscape and climate has created typical habitats for various unique species of wildlife divided across different sections of the country`s green land. The rich wildlife ecosystem Bharat possesses evokes a sense of royalty in the flora the country has to offer in the global village, from the ferocious Bengal tiger to the Asiatic elephant. The country has on multiple occasions exhibited its rich wildlife ecosystem, divided among multiple regions of the country. The Western Ghats, the Himalayas to the east, and the Indo-Burma region hold almost 34 of the world's richest biodiversity spots, hosting approximately 70 per cent of the world's biodiversity.[1] The country has become a popular global advocate of wildlife, possessing rare and on the brink of extinction, creating a dire necessity for special care and protection. Being one of the most distinctive selling points for the country in terms of tourism, the capitalist perspective of Bharat further requires its conservation. The grasslands of the western part of India pose as a popular destination for the hunting animals due to their location being popular among animals that graze.

Similarly, the mangroves are popular among the cat and reptile families. The wide variety of wildlife is distributed across the country on the basis of their suitable habitat and factors such as fauna, climate, and population. In the recent years, India has emerged as one of the most populous countries of the world. The accommodation of such a large population resulted in the deforestation and destruction of certain forest lands, dredging rivers, construction of dams, filling of wetlands, mowing of fields, agriculture, habitat construction, etc of Bharat resulting in the loss of habitat or habitat destruction, fragmentation and degradation.

The entire framework for wildlife conservation in India has a seen a revolutionary change in terms of the growing number of unique species adjusting to the diverse habitats due to the variant climatic conditions and circumstances across the country. This change in the topographic circumstances of the environment necessitated an elastic and adjusting legal framework governing and protecting the environment from the evils of mankind.

The past decade has witnessed India heralding a rather bold trajectory towards wildlife conservation. The protectionistic approach exhibited in terms of strategy and execution has seen a streak of determination maintained over the past decade. Multiple attempts were made at creating stringent and more rigid regulation to create a sense of fear among man and his greed to ensure a more sustainable future in India. The utility of animal products and animals themselves rose over the years simultaneously with the population of the country, animals were viewed as mere tools towards an ideal capitalistic society rather than being living just as much as man himself. History has seen a rise in luxury in the form of killing animals which posed as an alarming circumstance due to the potential endangerment of species preserved and protected for centuries. A need for a more stringent legal premises and regulation to ensure the man`s use of nature and its rightful owners avoids conversion to abuse. The social engineering legal jurisprudence principle as propounded by Sir Rosco Pound clearly establishes the

role law plays in striking a balance between the environment and mankind. Animal cruelty being an offence before the court of law was potentially a stepping stone towards a more sustainable environment and towards wildlife conservation. The country saw a revelation of an astounding incidents of animal cruelty across the states of the north, south, east and west which created a dire necessity for the introduction of the legal framework governing wildlife conservation.

References were made to frameworks from across the globe in understanding the standing of the countries of the world in terms of wildlife conservation and preservation.

The Stockholm Conference of 1972 or also known as the United Nations Conference on the Human Environment in Stockholm influenced and persuaded India towards a more sustainable environment but also ensured India took more independent steps towards the conservation of their wildlife heritage.

Prime Minister of that time, Late Indira Gandhi had emphasised on the need to channel our focus towards the loss in wildlife which ought to not be a mean to maintain foreign exchange. The International union for conservation of Nature resolution of 1963 created for a platform that advocated international trade regulations on rare species. The 1969 International union for conservation of nature or IUCN general assembly held in 1969 in the Capital of New Delhi, created the first step India took towards wildlife protection and conservation. The then Prime Minister Indira Gandhi urged the attending International Delegates to view the natural heritage to be of lasting value rather than being capital to mankind. The consequences of the speech was eventually banning the export of animal skin and a declaration of moratorium on animal hunting. The speech included the term " the Policy Will" which was a catalyst towards the drafting of the legal framework governing wildlife conservation and protection in India.

India has made a rather successful effort towards a framework ensuring sustainable development hand in hand a rather protectionistic view on wildlife rather than being a capitalistic move towards environment.

The intersection of artificial intelligence with wildlife conservation has viewed to be a rather predictable move towards the more economically inclined utility of such advanced and complex technology as a façade being for animal welfare but is truly a tool towards man`s greed and need.

1.1 The Wildlife Protection Statutory Framework in India – a Legal Premises

Bharat was once home to an array of exquisite species of wildlife, but has in this decade faced multiple of its unique species on the brink of extinction due to a rampant of hunting, poaching and other such illegal activities have a direct impact as to the wildlife livelihood. The English or the British had initially introduced the Wild Birds and Animals Protection Act of 1912 which was subsequently struck down due to the lack of there being room for a more dynamic interpretation towards the growing methodologies of wildlife cruelty with a rather complex utility of such methodologies of poaching ad trade of such abused wildlife. The gift of rich flora and fauna to India is safeguarded by the Wildlife (Protection) Act of 1972, which governs the protection and preservation of wildlife across the South Asian country of Bharat.[2] The statute poses

as a boundary and a guiding torch towards the protection and conservation measuring with the establishment of certain rules and regulations as to the practice of wildlife-related activities or activities having an impact on the wildlife in India.

1.2 The Evolution of Wildlife Conservation in India

India has seen a three-stage evolution of wildlife conservation over the centuries. Being a possessor of a rich history of wildlife conservation dating back to the ancient and medieval period, it played a vital role in the precipitation of several measures which are taken in the current era to ensure wildlife conservation and protection. The pre-colonial era in India exhibited a rich tradition of wildlife conservation rooted in the culture and societal practices. Ancient Indian rulers such as the Maurya, Ashoka, and Gupta emphasized the importance of protecting wildlife regardless of there not being specific legal premises. Conservation was immensely advocated in several religious scriptures, such as the Vedas, Ramayana, Mahabharata and the Dharma shastras, which advocated the protection of nature and animals. Indian tribals play a role in the conservation through their traditional practices.[3]King Ashoka emerged as a notable figure of this era in terms of wildlife conservation, whereby he introduced the fifth pillar edict during the third century BC, which prohibited the killing of animals and birds on specific days. The Kautilya Artha shastra, written during the Maurya Period, consisted of a section that laid down rules relating to environmental protection, which included the establishment of reserved forests and multiple zoological gardens. The colonial era in India faced significant decline due to the capitalistic mindset of the Colonizers. The British exploited, hunted and caused the felling of trees across the country. The colonizers considered the wildlife in India as only resources and capital gains. This decade long exploitation led to a large-scale decline in wildlife due to constant hunting and habitat destruction. During the late 19th century, there were certain efforts made driven hunter turned naturalists and the need to replenish game for hunting.

Certain Key legislations were introduced, one being the Wildlife Birds Protection Act of 1887, the Wild Birds and Animals Protection Act of 1912, and the Indian Forest Act of 1927 that aimed at regulating the activities of hunting, protecting certain species of wildlife and the conservation of forests. There were few wildlife sanctuaries and national Parks established marking a minute milestone to the Indian wildlife conservation efforts. The policies introduced by the colonizers were entirely self serving and commercial which resulted in the disregarding of traditional practices and local activities due to their limited access to forest resources. The era did lay down a thin foundation for the practice and growth of wildlife conservation. The post colonial era exhibited a significant shift towards a rather structured wildlife conservation efforts wherefore there was no immediate policy framework, but more government initiatives towards restoring the lost wildlife ecosystem due to the colonizers. The legislature subsequently introduced the Wildlife Protection Act of 1972, which created a safety net for wildlife, especially endangered species, and regulated wildlife-related activities such as hunting, national parts and sanctuaries.[4]

Large scale projects such as Project Tiger of 1973, Project Elephant of 1992 were launched to protect related species and their habitats. The government further created

the Indian Board for Wildlife of 1952, the National Tiger Conservation Authority of 2006, to monitor and oversee the conservation efforts made by the government. Despite the efforts made, there exists challenges of habitat loss, poaching, human wildlife conflict persistence which are certain hurdles the government continues to this date effectively to overcome with the assistance of the present tools of artificial intelligence.

2 The Intersection of Artificial Intelligence and Wildlife Conservation in Bharat – The Optimistic Measure

The rich wildlife ecosystem of India has often turned heads with its maintenance and observation. The use of artificial intelligence has seen growth and has revolutionized the entire landscape of wildlife conservation, wherefore it has brought in a rather astounding amount of efficiency, speed and transparency. Complex conservation methodologies have been effectively implemented in terms of monitoring, observing and preserving habitat and wildlife in multiple landmarks across the nation. Complex artificial intelligence tools that effectively recognize and classify multiple species, along with foreseeing the impact of climate change. The increasing popularity of the utility of artificial intelligence-induced tools in the wildlife ecosystem has had an everlasting impact on the technological industry, whereby the concept has expanded and has never looked back since. Artificial Intelligence was considered to be a great tool for predictive modelling capable of detecting aspects such as migration routes, prediction on the spread of invasive species, anticipated outbreak of illness rooted in certain species, and calculating the impact of certain forms of climate change on particular ecosystems using existing environmental databases as the foundation for understanding of the patterns of lifestyle.[5] Consequently, a multinational corporation found itself a profitable market and introduced multiple artificial intelligence tools specifically applicable in biodiversity related activities, sparking a newfound interest in the wildlife arena in India.

2.1 The Collaboration of Artificial Intelligence and Wildlife Conservation

Being a fundamental to the balancing of the ecosystem, wildlife poses as a delicate group of biodiversity requiring special attention and care in terms of preservation and conservation, artificial intelligence being a rather useful tool to ensure such measures create an atmosphere of security with an ambition of conservation.[6]Phrases such as “Artificial Intelligence for Earth” soon gained momentum, leading to a worldwide campaign spotlighting India as a prime destination for testing, using and observing. The increased population and need for resources created a sense of greed and a rather capitalistic view towards the wildlife, being viewed as commodities rather than living beings. The convenience of the existing useful artificial intelligence tools to streamline such greed created multiple instances of the illegal use of artificial intelligence in the name of wildlife conservation. The facadicious use of such tools of technology has created a dilemma as to whether such tools are a source of protection or a potential threat to the ecosystem.[7]The flip side of the utility of artificial intelligence in the legal

action in relation to wildlife conservation was welcomed and a boon to the economy in terms of predicting the growing concerns or activities of the wild. Artificial intelligence offers an unprecedented opportunity in tackling complex environmental challenges. From monitoring wildlife population to tackling poaching, artificial intelligence has potentially reshaped mankind`s understanding of the ecosystem in which it resides.[8] Technologies such as machine learning, computer vision, and autonomous drones demonstrate revolutionary potential. The data gathered and stored by these devices provide for an unimaginable database for studying the dynamic circumstances of wildlife in India.

2.2 The Shift From Traditional Methodologies to Modern Methodology of Wildlife Conservation

Wildlife conservation has mapped itself to historic methodologies being introduced in ensuring the safety and existence of the multiple species of the country. Historically, conservation efforts have often relied on traditional methods such as field work in terms of survey for data collection, satellite monitoring, and manual data collection. The approaches made in this have exhibited the sheer determination toward conservation, but contradictorily, further posed to be extremely laborious and time-consuming, along with potential error due to human efforts.[9]The limited human access to such wildlife populated areas makes the traditional observation methodologies a harrowing task. Field survey methodology of data collection involves the physical presence in the habitat to collect data, which could potentially disturb the ecosystem of the wildlife habitat. Traditional methodologies have shown successful results in the beginning, but with the expansive wildlife landscape, the traditional methodologies pose a burden rather than boons. This dilemma has caused for a shift from the traditional methodology of wildlife conservation to the modern methodology of wildlife conservation. Factors such as large-scale data, immunity toward external threats such as climate change, illegal poaching, habitat encroachment, and accuracy have played a pivotal role in encouraging the shift in methodologies.[10]The advent of artificial intelligence marked a significant turning point in wildlife conservation. The tools surfacing through artificial intelligence had convincingly overcome multiple challenges which were consistent with the use of the traditional methodologies. The increase in capacity in conservation created a shift from effectiveness to efficiency, whereby the result was focused upon rather than the process due to the lack of major human interference in the utility of such artificial intelligence induced tools for conservation.[11]Artificial intelligence has proven to be a valuable tool in terms of forecasting potential challenges as to wildlife wherefore the predictive model utilizes existing data as a foundation along with the collected data wherefore it is subsequently creating potential circumstances which may arise in the wildlife or in the ecosystem which could pose as a hurdle.[12]

2.3 The Line of Control for Artificial Intelligence-Induced Wildlife Conservation

Statutes such as the wildlife protection act of 1972 did pose as a rather optimistic statutory framework along with the information technology act and the DPDP act which is the short form of Digital Personal Data Protection Act of 2023, in regulating the utility of artificial intelligence in wildlife protection and conservation, but contradictorily posed multiple loopholes due to the generic nature of such provisions having a narrow scope of application in circumstances of the utility of artificial intelligence in wildlife. The growing concerns as to the utility of artificial intelligence in wildlife have created an atmosphere of fear as to the potential abuse of such features of technology.[13] The precipitating wildlife endangerment cases in the past decade in India, with the utility of artificial intelligence has created a necessity of an independent or separate legal framework, particularly on the utility of artificial intelligence in the biodiversity and wildlife arena.

3 The Legal Framework for Artificial Intelligence in Wildlife Conservation in Bharat – The Need of the 21st Century

3.1 The ‘ why’ factor

The ethical implications of the use of artificial intelligence in wildlife became more of a debate over a conversation. Multiple studies found the presence of drones and other monitoring devices generated through artificial intelligence to be a disturbance to the animal behaviour potentially causing harm over good.[14] Species alter their habits and behaviour out of fear of surveillance. Certain concerns over large scale data collection of wildlife movements causing human privacy issues within surveillance technology were discovered highlighting multiple ethical concerns as to the prominent locations being habitats to endangered species being potentially exploited. The multiple studies on such utility of artificial intelligence in multiple industries such as medicine, biodiversity have opined the formulation of ethical standards or regulations creating a sense of security to the victims of such privacy related concerns due to the unbounded utilization of artificial intelligence.[15] Despite there being a rapid growth in the use of artificial, a significant rise in number of circumstances of misuse has been observed which alarmed the necessity of a legal premises of such utility of artificial intelligence. The achievement of short term goals often façade the long term impact the use of unregulated artificial intelligence in the field of wildlife for the purpose of ‘conservation’.

3.2 The independent legal framework

The architectures of the law have often praised the advent of artificial intelligence and the all- round capabilities it possesses but fail to dive into the potential misuse it could ensue. Artificial intelligence being a man made wonder could one day betray mankind due to man`s own greed. Given the potential it possesses to disrupt the wildlife

behaviour or invade the sensitive habitats, ethical considerations along with their basic right to life ought to be the primary elements to the introduction of an independent legal framework governing the utility of artificial intelligence in initiatives and protects relating to wildlife conservation. Ethical guidelines surrounding matters in this regard on data privacy and protection of sensitive data collected relating to extinct or rare species to prevent misuse ought to be specified.[16] Provisions relating to the utility of artificial intelligence in wildlife conservation by private parties with government consent ought to ensure an environment impact assessment to cater to the needs of not only mankind but the wild after the study within their habitats have concluded. The use of artificial intelligence is not the question of concern but the method of using artificial intelligence is concern.[17]There ought to be a boundary as reasonable restriction to ensure the use and abuse are not collaborated creating a deep impact on the biodiversity and the environment in India.

3.3 The consequences of legal regulation

Introducing a legal framework to govern, regulate and protect the wildlife from the use of artificial intelligence would be an extreme but essential in today`s world.[18] The boon being artificially generated or created by man poses as a threat if the purpose is lost among the greed man holds towards financial gain. The legal framework covering the elements of the utilization of artificial intelligence in wildlife conservation would entail the conducting of environment impact assessment upon the use of artificial intelligence to ascertain the changes identified in collecting relevant data of wildlife. The use of artificial intelligence in wildlife conservation in terms of habitat monitoring, surveillance of certain species for the purpose of protection from external factors etc. ought to be procedurally instructed and trained to ensure there being a lack of circumstances of deviation from the purpose of the utility of artificial intelligence. The statute would further ensure a stricter regulation and monitoring of private entity involved in independent projects on wildlife conservation be vetted by the government or the relevant authority to prevent the exploitation and any form of potential harm to the wildlife.

4 The Conclusion

The advent of artificial intelligence in India has created a revolution in multiple sectors of the economy. The deep rooted impact it created exhibits that the mode of function is here to stay and is temporary to none. Industries such as medicine, law, engineering, wildlife have used and abused artificial intelligence to the brim. The abuse has raised certain ethical concerns over the impact it could create on the wildlife species having to face the constant wrath of artificial intelligence generated devices. Studies conducted to monitor the habits and daily life of such wildlife creatures have witnessed sudden change in behaviour due to the stress and fear of such devices potentially to cause danger and harm to the species. Data Privacy related matters on collected data as to the

livelihood of such species or certain species have alarmed the necessity of a legal framework entirely focused on creating a boundary to the utility of such artificial intelligence generated devices in the field of biodiversity to ensure the abuse is contained. The impact the use of such artificial intelligence devices creates fails to serve the entire purpose of its utility which is for the protection of wildlife. The introduction of an independent legal framework to govern such utility of artificial intelligence induced device could serve as a basic foundation to the use of artificial intelligence in ensuring the protection of the rich biodiversity India is gifted with along with ensuring the preservation of such boons.

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