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Spatial justice for elephants:
the case of the Nilgiri Biosphere Reserve (southern India)

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Abstract

We address the issue of spatial justice with reference to Asian elephant conservation and the handling of animals perceived to be problematic in the Sigur region, Nilgiris Biosphere Reserve, southern India.

In this village-dotted region, the need to create corridors to facilitate elephant movement was challenged by tourism operators. The courts ruled in favor of the corridors. Investigations determined that many hotels were unregistered and had to be closed after thirty years of operation.

Tourists illegally feed elephants without being stopped. Elephants become problematic, crossing into villages. These animals are eventually killed or captured with no other wildlife management options being considered despite courts decisions. Proactive management measures that are fairer to the elephant should be implemented.

A form of spatial justice for elephants has been recognized by the courts, but has yet to be effectively implemented. The difficulty lies in corruption and lack of good governance in the public service. As a result, such justice remains an unattainable goal for the time being.

Keywords: Asian elephant, conservation, landscape ecology, protected area, coexistence

Résumé

Nous abordons la question de la justice spatiale en référence à la conservation de l'éléphant d'Asie et aux traitements réservés aux animaux perçus comme sources de problèmes dans la région de Sigur, réserve de biosphère de Nilgiris, en Inde du Sud.

Dans cette région parsemée de villages, la nécessité de créer des corridors pour faciliter les déplacements des éléphants a été contestée par les opérateurs touristiques. Les tribunaux se sont prononcés en faveur des corridors. Des enquêtes ont déterminé que de nombreux hôtels n'étaient pas déclarés et ils ont dû fermer après trente ans de fonctionnement.

Les touristes nourrissent illégalement les éléphants sans en être empêchés et modifient ainsi le comportement des éléphants qui deviennent problématiques. Ils traversent notamment des villages. Ces animaux sont tués ou capturés sans qu'aucune autre option de gestion de la faune ne soit envisagée malgré les décisions de justice. Des mesures de gestion proactive plus justes envers l'éléphant devraient être mises en œuvre.

Les tribunaux ont reconnu une forme de justice spatiale pour les éléphants, mais cette dernière reste à mettre véritablement en pratique. Cette justice reste pour l'heure un objectif inaccessible en raison de la corruption et du manque de bonne gouvernance dans la fonction publique.

Mots-clés : éléphant d'Asie, conservation, écologie du paysage, aire protégée, coexistence

Authors' note

This paper is a plea for the recognition of environmental rights for animals. It was written by Jean-Philippe Puyravaud and Priya Davidar, managers of the [Sigur Nature Trust](#), an association which for five decades has been responsible for the protection of 12 hectares in the heart of the Nilgiri Biosphere Reserve. Particularly concerned about the plight of elephants, they assess here the consequences of a decision by the Supreme Court of India to protect corridors for the passage of animals. They also discuss the case of Rivaldo, an elephant taken captive and then released after a rehabilitation plan was proposed. This analysis makes it possible to identify the structural obstacles to the implementation of justice for elephants, and more generally recommendations for a better implementation of the principles of animal justice.

Introduction

The impending extinction of many wild species in the Anthropocene has led to a growing realization of our moral duties towards nature in the form of ecological justice and ecological citizenship (Sollund, 2020). Ecological justice is the responsibility that humans have towards other forms of life, to act as guardians to ensure their survival (White, 2013). Ecological citizenship is the recognition of an animal's right to live safely in its natural environment (Donaldson and Kymlicka, 2011).

If we are to extend spatial justice to wild animals, we must first protect their habitats to allow for viable populations. We would also strive to maintain their autonomy by avoiding habituation to humans (see for example Mathevet and Béchet, 2020) in order to maintain the evolutionary potential of these species. This goal is not as selfless as it seems. Protecting life on Earth has become an imperative for humanity (Bradshaw, Ehrlich and Beattie, 2021).

Large-scale restoration, rewilding, sustainable use, landscape protection are needed (Garibaldi, Oddi and Miguez, 2021). But why are we in the current crisis? Is the destruction of biodiversity the inevitable result of increasing human well-being? Or is biodiversity being destroyed because it is being mismanaged? We consider below the role of governance and the application of the law on elephant conservation in southern India.

The Asian elephant in the Sigur Region

The Asian elephant (hereafter “elephant”), an endangered species like all elephant species, is the second-largest land animal after the African bush elephant. An adult male elephant weighs up to five tons and has tusks, while a female elephant reaches about three tons and has no tusks. In India, the elephant was once a widespread animal, but is now confined to four disconnected regions (figure 1). The largest elephant population today, with about 6,000 individuals (Baskaran, 2013), is found in and around the Nilgiris Biosphere Reserve (NBR) in the Western Ghats of India (figure 2). The NBR itself is fragmented, and 50% of its area (5,670 km²) is close to villages and therefore severely disturbed.

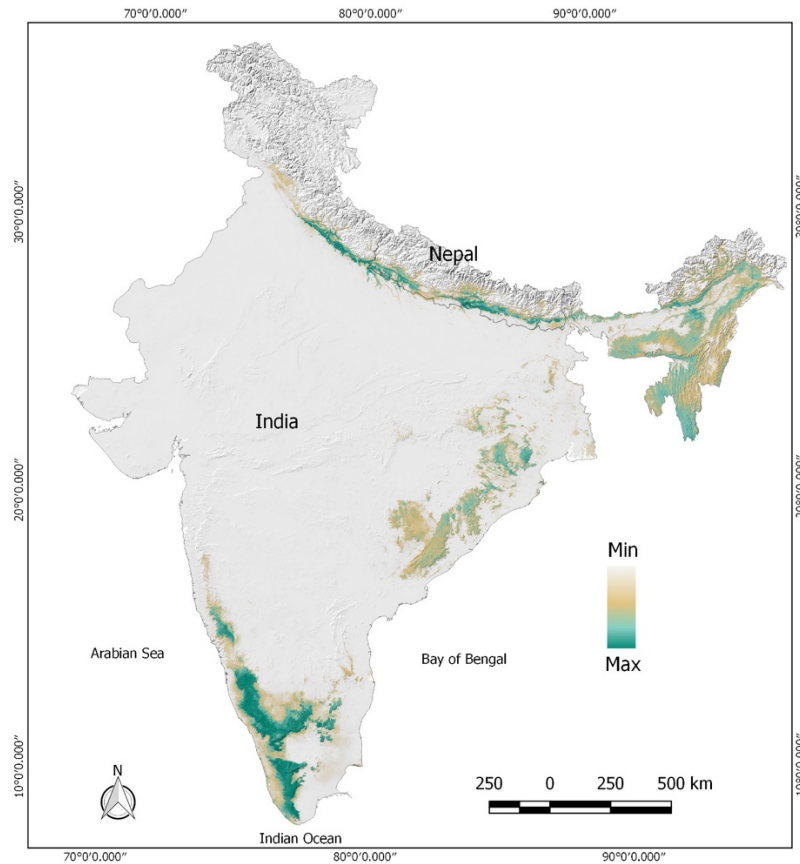


Figure 1: Elephant habitat suitability in India and Nepal (map designed from 115 indicators including natural environment, anthropogenic disturbance and climate change)

© Kanagaraj, Araújo, Barman et al., 2019, p. 831 for the original map

The Sigur region (figure 2), in the heart of the NBR, contains villages surrounded by reserves, including the Mudumalai Tiger Reserve. Most of the human population is made up of tribals¹ (indigenous people), laborers who have been involved in the construction of major infrastructure, traders attracted by the development of tourism, and new wealthy residents. Tribals are quite tolerant of wildlife (Mammen, 2017) while other communities have a more nuanced view based on their economic interests and culture. For example, opposition to a conservation project has been led by tourism operators who yet benefit financially from nature.

1. We prefer to refer to indigenous people as “tribals” because since the Independence of India in 1947, the term is precisely defined due to the existence of positive discrimination programs.

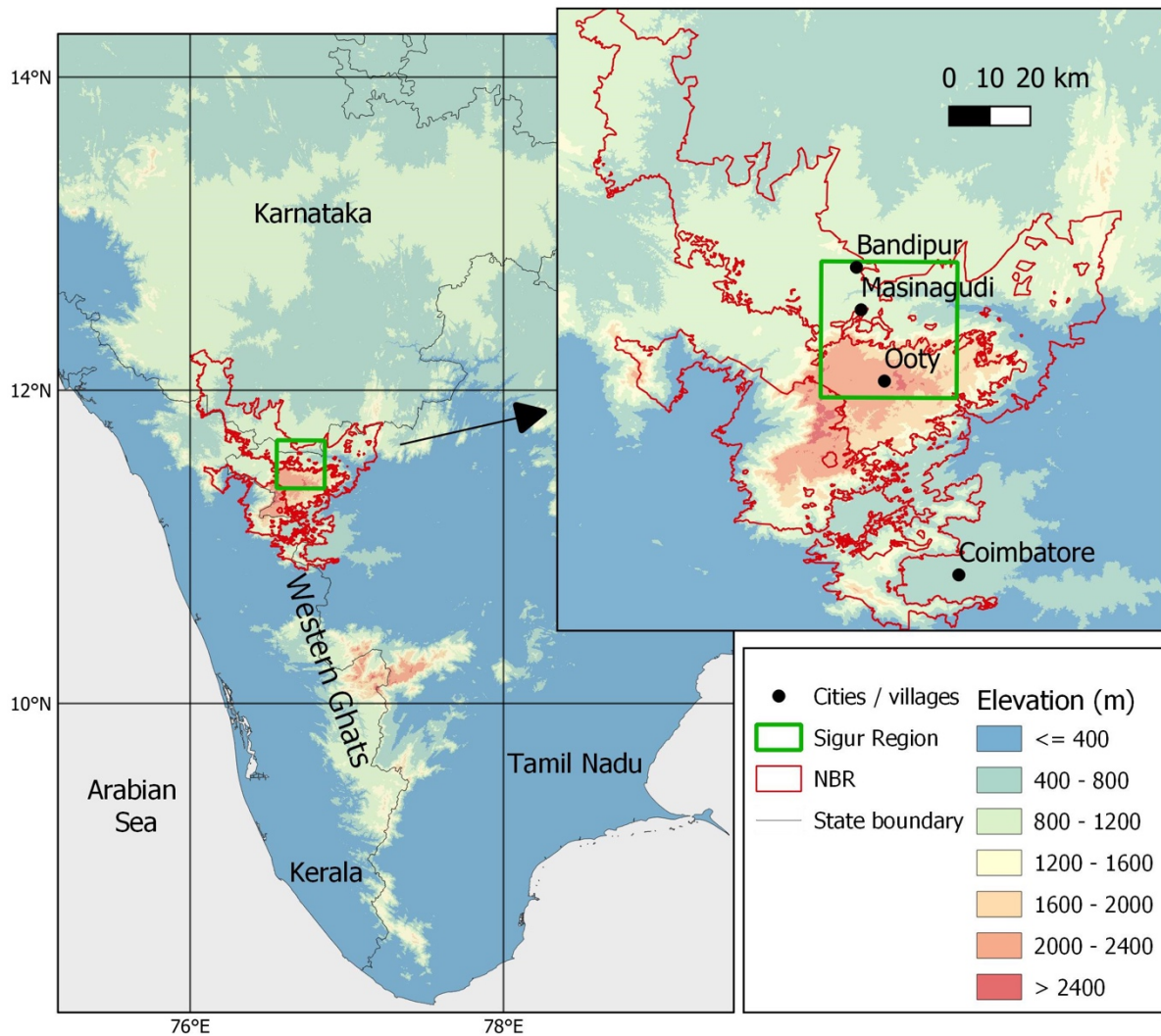


Figure 2: The Western Ghats, the Nilgiri Biosphere Reserve and the Sigur region
 © Jean-Philippe Puyravaud ; © Reuter, Nelson and Jarvis, 2007 for the background map

Tourism operators against elephant corridors

In the 2000s, the Sigur region became overwhelmed by tourism (figure 3). The Tamil Nadu State Forest Department² organized to change the protection status of the area and define corridors, places that would ensure the movement of

2. In India, forestry falls under the dual jurisdiction of the federal and state governments. In each of these states, the Forest Department exercises considerable power over the areas officially classified as "forest".

elephants. A team of experts proposed the designation of 4,225 acres (1,710 ha) that covered lands where hotels were located: economic activities would have to be severely restricted.

Some hotel owners strongly objected to the proposed land classification. Based on a report on corridors in India, *Right of Passage* (Menon, Tiwari and Easa et al., 2005), these hotel owners claimed that their land was not in a corridor. As a result, they argued that the Forest Department proposal was unscientific and should not be followed. One of the authors of *Right of Passage* even told the Court that to his knowledge there was no corridor in one of the villages. The expert failed to mention that *Right of Passage* never proposed a precise definition of “corridor”, nor a method for identifying them, which makes the document rather useless as a reference. In short, *Right of Passage* could not invalidate the proposed corridors on scientific grounds. The Forest Department project was clearly a laudable effort to secure passages between villages clogged with construction and disturbance of all kinds, and the elephant specialist’s statement offered strong but questionable support to the tourism operators.



Figure 3: Resort in an elephant habitat

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The tourism industry produces a multitude of difficulties for elephants: fences, disturbance, stress, violence, destruction of ecosystems and an abundance of waste. Tourists want to see animals and take a jeep taxi to go anywhere, legally or not. The tour is usually uninteresting because the drivers have no knowledge of wildlife. When an elephant is spotted, it is disturbed to the point of fleeing or attacking. Tourists want the thrill of being charged by elephants and there is a special rate

for this. In hotels, some managers feed the animals. During these unwanted interactions for their welfare, elephants become accustomed to humans, beg or demand food. Some become dangerous.

Endless discussions on the concept of corridors ensued till the Madras High Court dismissed the owners' argument in 2012, observing that the *Right of Passage* was an indicative list and not a final summation of all corridors. The High Court judgment was challenged in the Supreme Court, which upheld the judgment of the Madras High Court³. In the meantime, a study identifying corridors using landscape ecology techniques (Puyravaud, Cushman, Davidar et al., 2016) confirmed that the Sigur plateau was indeed a major corridor of much greater importance than previously realized. It became pretty obvious that passages around villages had to be preserved to secure the regional population connectivity.

Due to the chaotic development of tourism, a study was conducted with our collaboration with the aim of understanding the economic model of the hotels (Pallas, 2012). The survey showed that only a rare minority of establishments were making efforts for wildlife conservation, while all understood the financial benefit of being centrally located in the NBR. Tourism is known to often kill the resource on which it is built, a fact that professionals sometimes take into account to mitigate their own impacts. In 2018, the Supreme Court's decision shed light on this conundrum: its ruling prompted the closure of most of the hotels in these corridors (39 in total). The assumed risk of operating without authorization, doing nothing for conservation and opposition to corridors are indicative of the hotels' quest for maximum profit.

Since the time when India liberalized its economy in the early 1990s, tourism development has taken place in an uncontrolled manner. Land acquisition, electricity meters, building permits, water connections, business licenses, liquor licenses, etc. have been obtained partly or wholly illegally, with the cooperation of officials, if not the administration. In this context, it is not surprising that no conservation restrictions are accepted as baksheesh is a good substitute for the law.

There was understandable concern about the fate of tribals and their livelihoods. The Supreme Court decision clarified that no tribal village in the corridors should be forcibly displaced. Only voluntary relocation could be considered. There were also concerns about the loss of tribal jobs related to tourism. However, these jobs were mostly similar to those of migrant workers whose plight was highlighted by the Covid crisis (Landy and Noûs, 2020). Those who lost their jobs quickly adapted to the situation, joining other hotels, abundant in the Nilgiris. Justice for the elephants was not synonymous with injustice for the locals.

Free for all

The continuing degradation of the environment could have been largely controlled by existing regulations. Most of the many public services (electricity distribution, water, land use planning and occupation, building permits, etc.) have been left to the highest bidders even though they impact on wildlife. For example, water cannot be pumped from rivers and well

3. <https://www.downtoearth.org.in/news/wildlife-biodiversity/nilgiris-elephant-corridor-sc-upholds-madras-hc-order-affirming-animals-right-of-passage-73791>

drilling is supposed to be regulated so that water is available all year round for everyone, including wildlife. But unauthorized pumping for the huge needs of hotels, sometimes with swimming pools, has led to the drying up of perennial streams. Villages suffered from water shortages, riparian forests were damaged, and elephants became dependent on rivers miles away from their feeding grounds.

The Supreme Court's decision has placed environmental protection above mercenary practices. This ruling has certainly provided some balance. Nevertheless, it is far from clear whether an effective administration, crucial for large-scale environmental preservation and human welfare, will be able to function in the future. The implementation of the law rests on the fragile shoulders of the District Collector, who works under political pressure and remains surrounded by an army of corrupt officials.

Rivaldo, star victim among elephants

We have chosen to focus on the case of an elephant to illustrate the complexity of the situation. The observation of individual elephants can help in the design of appropriate management policies.

Rivaldo (see figure 4) was named after a fan of the Brazilian soccer team who noted how much elephants like to play with car tires. He was injured in 2013 and lost 30 centimeters of his trunk. The circumstances of the incident remained unknown. The elephant was nursed back to health in a secluded area, regained weight and reasserted himself by charging young elephants who were trying to "steal" the forage left for him by the veterinary assistant. He relearned to pick small objects such as flowers with his crippled trunk, and became strong enough to break trees again. With his trunk cut off, Rivaldo's breathing has become noisy. The tip of the trunk acts as an exhaust pipe: having lost it, the elephant can be heard at night, which makes a convenient warning during his nightly visits. He has recovered well and has totally compensated for his handicap (see video).



Figure 4: Rivaldo mid-August 2021

© Jean-Philippe Puyravaud

In 2013, the elephant was spending up to five hours in the vicinity of where it had been treated. But it was offered less and less food over time. We recorded its dates of visits (Puyravaud, Puyravaud and Davidar, 2016) and found that they were becoming less frequent. It is generally assumed that elephants cannot be weaned from cultivated fruits and remain a constant problem after feeding on them. Our study suggests that this may not always be the case, but data are lacking and not all experts agree: a classic case in science, and a convenient truth for managers who do not want to bother with conservation.

Rivaldo was injured again in 2015, this time by another elephant. He was treated for two weeks by staff who were very close to him, which made him tolerant of human presence. This was an opportunity for some to show him off to the public: Rivaldo's "handlers"—anyone who managed to get his attention with fruit to lead him to tourists—competed for this lucrative business. The competition became so fierce that one person was killed by a rival. In another case, a forest ranger was transferred (temporarily) after a video was released showing money received from tourists. Rivaldo started entering villages and had to be placed under constant surveillance by rangers. In 2018, he lost his right eye, probably because of a stone thrown at him.

Arbitrary denial of spatial justice

In 2020, a recent resident of the area campaigned for Rivaldo's "rehabilitation" in an elephant camp after a trespass in her garden. Mudumalai Tiger Reserve officials then decided to capture Rivaldo. An expensive cage (a kraal) was built to "break" the elephant, which is a cruel treatment that deprives the animal of food, water and space until it obeys orders. The reasons given for capturing the elephant ranged from its safety⁴, to poor health⁵ (including "labored breathing", actually just noise as mentioned earlier), and injuries⁶. Rivaldo was captured on the 5th May 2021, as he trustingly followed those who fed him for months into the kraal.

Section 11 of the Wildlife Protection Act of 1972 states that an animal placed on Schedule I (the highest level of protection) may be removed if it "has become dangerous to human life or is so disabled or ill that it can no longer recover". However, no written complaint had been made against the elephant on the grounds that it was aggressive, and the local veterinarian never recommended its capture as he considered the animal to be in good health. After the construction of the kraal, a Madras High Court judgment in March 2021 ordered that the elephant could not be held in captivity after its treatment. The interpretation of "treatment" falling into the ambiguous register of professional interpretation, the elephant was subjected to a cruel regime as it was sentenced to join Theppakadu camp in the Mudumalai Tiger Reserve.

Online petitions were signed, letters sent, and the well-known politician and animal rights activist, Maneka Gandhi, campaigned for the release of the elephant. In response, the officials of the Mudumalai Tiger Reserve organized, at the end of June 2021, a committee of experts to provide "advice" on the elephant's fate. Although each expert designed his or her contribution on the basis of sound ethical principles, the formation of a committee by the very people who wanted to capture Rivaldo did little to reassure the public of the neutrality of the operation.

The question arises as to how it is possible to treat an endangered species in such an irresponsible manner. The rhetoric of the officials, a series of diverse and contradictory stories about why Rivaldo should be captured, was supported by their administration. Conversely, the Court's ruling remained open to interpretation, online petitions had little influence and pressure remained ineffective. The situation did not bode well for Rivaldo's release, and beyond his particular case, for humane elephant management.

Back to the real

The real reason why Rivaldo is seen as problematic is that he enters villages. Foresters have been following the elephant on foot at great risk for years and feeding him away from the villages, getting him even more used to human food.

4. [Rohan Premkumar \(?\)](#), « [Conservationists criticise move to capture elephant](#) », March 18, 2021, [The Hindu](#), accessed on November 19, 2021.

5. [Rohan Premkumar](#), « [Kraal being readied to capture and treat Rivaldo](#) », March 22, 2021, [The Hindu](#), accessed on November 19, 2021.

6. [Rohan Premkumar](#), « [Forest Dept. to make one final effort to drive Rivaldo back into the wild](#) », March 22, 2021, [The Hindu](#), accessed on November 19, 2021.

No one, as far as we know, except for one ranger who was filmed, was punished for feeding the elephant. Rivaldo was even kept and fed near a tribal school until he was captured. Reducing the risk of an elephant entering the backyard of a wealthy gated community by feeding it for months near a school is a management choice that we hope will not be emulated.

Since Rivaldo's wanderings in villages and his habit of human food were the real problems, we had suggested an action plan more than a month before his capture. This plan was only a draft and was published after several months (Davidar, de Silva and Puyravaud, publication in progress). The protocol to reduce Rivaldo's visits focused on: gradual modification of its diet and habitat, sensitization of villagers and hoteliers to the danger of feeding elephants, recording of incidents or encounters, and analysis of elephant behavior. Such a project, to be successful, had to demonstrate that the animal changed its behavior after three to six months and that it posed no more risk than any other elephant. The plan was ignored.

The exception is the rule among elephants

The proposal to control, or even capture, is based on an outdated conception that one elephant is identical to another elephant. Elephants are intelligent animals that are self-aware and can apparently count, and assess quantities (Plotnik, Brubaker, Dale et al., 2019). Countless papers in ecology now show the importance of individual behaviour (e.g., Malishev and Kramer-Schadt, 2021; Ranc, Moorcroft, Ossi et al., 2021). Elephant behavior cannot be reduced to a stereotype, such as that of a deer that will systematically flee at the sight of a human. Humans provoke different responses in different elephants, from fear to curiosity to antagonism. On encountering an electric fence some elephants will immediately abandon the attempt to cross and turn away, while others will learn to neutralize the fence with their tusks or even branches. Therefore, the management of an elephant population cannot be compared to cattle breeding. Individual differences will systematically produce what humans consider to be problem animals, that is animals whose behavior does not match their expectations. These animals are important for the evolution of the species, but are currently at risk of being pushed out of the population.

In the above circumstances, elephants are bearing the brunt of the problems while humans are clearly the culprits. A paradigm shift is therefore needed by accepting that the exception is the rule among elephants. Law enforcement must be immediate and incidents recorded to identify sensitive cases. Scientific studies on ways to promote peaceful coexistence with elephants in the region should be initiated as a priority.

What are our recommendations for ensuring spatial justice for elephants? A de-habituation program such as we have proposed is logistically difficult and requires a lot of planning and energy. There is no guarantee that every elephant can be rehabilitated. But the reactive, not proactive, management we see today is incomparably more expensive, dangerous and complicated when all the costs are included: the staff who follow the elephant for years, the damages to property, the risks to people and especially children, the capture operation and the long maintenance in captivity.

The lesson from this experience is that *laissez-faire* leaves the door wide open for disasters, whereas good governance solves problems before they arise. From this perspective, it is absolutely clear that the risks of habituation are limited when management is proactive.

Elephants and black swans

Nassim Taleb has developed the black swan theory, which explains the disproportionate role of major accidents, which are rare and impossible to predict because they fall outside the range of events envisaged by statistical tools (Taleb, 2007). In April 2021, Rivaldo did benefit from a black swan in the form of the Tamil Nadu state elections: a more conservation-friendly government was elected. The new Chief Wildlife Warden of the Forest Department studied Rivaldo's case and concluded that there was no reason to keep the elephant in captivity. He ordered its release, and the elephant was set free on 2 August 2021.

A radio collar has been placed on Rivaldo to obtain his location at hourly intervals, and a team from the Forestry Department is following him on foot to observe his behavior. Captive elephants have been placed in some villages to chase Rivaldo away in case he tries to visit his old feeding grounds. Finally, residents have been warned of possible prosecution if they feed the elephants.

A month and a half after his release, Rivaldo has never been fed. He tried to return to where he had been fed during his first week of freedom, but soon learned not to enter the villages and now stays in the jungle. He appears to be better fed as the distraction caused by the offer of processed food had probably decreased the amount of forage ingested, which is necessary for his physiological needs. Although Rivaldo will have to be closely monitored for several more months, at the time of writing, his release is a great success. The corollary is that his capture appears to be unnecessary, costly and unjust.

Is spatial justice for animals achievable?

Court rulings in favor of conservation regulation and individual cases show that in some cases spatial justice is being extended to elephants. But is it really sustainable?

When the corridor ruling was handed down, there were attempts to have the District Collector transferred because she followed the Court ruling. The Court objected to a transfer until the implementation of the judgment was completed. Despite the efforts of some officials, the difficulty lies in the well-established tradition within the public services of demanding bribes. The system is so well organized that it amounts to an informal tax affecting all departments and almost all administrative procedures. Only the hotel owners have been indicted, not a single official has been held accountable for decades of gross misconduct affecting conservation on the ground. The context for illegality remains, and may jeopardize the Court's judgment by the many arrangements that local administrators will make with contractors.

In the case of some elephants, there is undoubtedly an effort to be fair. As far as Rivaldo was concerned, the former managers of the Mudumalai Tiger Reserve had made inappropriate decisions, and had even misled the Court about the objectives of the capture. The opacity with which the operation was conducted and the environment in which it developed left little hope for a satisfactory outcome. This was only brought about by an unrelated event, the change of Chief Minister in the state of Tamil Nadu.

In an influential paper, Robert Wade studying canal irrigation in South India observed: “how some irrigation engineers raise vast amounts of illicit revenue from the distribution of water and contracts, and redistribute part to superior officers and politicians [...] the corruption ‘system’, which is centered on control of personnel transfers, is an important supply-side reason for poor performance of canal-irrigated agriculture. Insofar as the same system operates in other government departments, it may be more important for understanding Indian politics and the political influences on economic development than has previously been realised” (1982, p. 287).

If environmental management in 2021 suffers from the same flaws as irrigation systems in the early 1980s, then conservation conflicts would have an important part of their origin in the deepest organization of the administration. The daily operations observed in the field support this hypothesis. However, simple administrative control operations such as building permits or permits to receive the public cannot be carried out by the Supreme Court. We cannot count on elections with happy consequences every time questionable decisions are made. Much of the destruction of nature is therefore probably due to endemic corruption. If we do not correct what is ultimately the cause of enormous wastage of ecological resources, then major restoration projects to for example reduce global warming will have little chance of success.

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