



SAPIENZA, UNIVERSITÀ DI ROMA
DIPARTIMENTO DI STUDI ORIENTALI

THE HUMAN PERSON
AND NATURE
IN CLASSICAL AND MODERN INDIA

SUPPLEMENTO N° 2
ALLA RIVISTA DEGLI STUDI ORIENTALI
NUOVA SERIE
VOLUME LXXXVIII



PISA · ROMA
FABRIZIO SERRA EDITORE

2015

RIVISTA DEGLI STUDI ORIENTALI

NUOVA SERIE

Trimestrale

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Fabrizio Serra editore, Pisa · Roma

Fabrizio Serra editore incorporates the Imprints Accademia editoriale, Edizioni dell'Ateneo, Fabrizio Serra editore, Giardini editori e stampatori in Pisa, Gruppo editoriale internazionale and Istituti editoriali e poligrafici internazionali.

ISSN 0392-4866

ISBN 978-88-6227-839-3

ISBN ELETTRONICO 978-88-6227-840-9

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WORK, KNOWLEDGE
AND SUBALTERN SUBJECTIVITIES
IN SOUTH INDIAN NATURE CONSERVATION

URSULA MÜNSTER*

This paper explores how environmental labour in nature conservation has shaped the subjectivities of subaltern forest workers at the Wayanad Wildlife Sanctuary in Kerala, South India. Since colonial times, indigenous *adivasis*¹ living at the forest boundary in Wayanad have had a close working relationship with the Indian Forest Department. Forest governance at the sanctuary is built on the expertise and physical hardships of these *adivasi* workers, whose experiences nonetheless have been largely neglected in the history and ethnography of Indian forest conservation. The successive colonial and post-colonial governments have depended on the environmental knowledge and skills of so-called forest tribes to manage and govern the region's protected forests. I argue that the daily routine of working in the sphere of forestry and wildlife conservation has deeply influenced the self-conception and subjectivities of former hunters and gatherers, who refer to themselves as forest workers, or *kattu panikkar* in Malayalam.

By drawing attention to *adivasis*' labour relations with the Forest Department, this article discusses how environmental rule, subject formation and knowledge production are never one-way (and top-down) processes. As K. Sivaramakrishnan (2003) reminds us, scientific environmental management and expert rule always relied on local forms of ecological knowledge. I argue that conservation and forest work in South India has bound together a diversity of actors in «socioecological networks» – «assemblages of plants, animals, people, physical landscape features, and technologies» (Rocheleau 2011: 209). In these power-laden assemblages, where subaltern labourers, forest officials and scientific experts interact and work together for conservation, hybridised forms of environmental knowledge (Phadke 2011; Tsing 2005; Warwick 2002) and practised expertise have emerged. Focusing on the labourers' (invisible) role in environmental management and on their relationship with foresters, conservation experts and wildlife scientists thus serves to blur established categories and boundaries between indigenous knowledge versus

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¹ *Adivasi* is a Hindi word meaning «original inhabitant». The expression «*adivasi*», points towards the attempts of India's indigenous groups to attain political self-determination. However, Wayanad's heterogeneous indigenous communities usually refer to themselves as «tribals», which in scholarly contexts evokes discriminatory connotations. In official contexts (census data, government institutions, etc.), India's indigenous groups are termed «Scheduled Tribes» (STs), as notified in the country's constitution for purposes of positive discrimination (see <http://ncst.nic.in>). In this paper I use the three terms interchangeably.

scientific knowledge, hunters and gatherers versus wage labourers and conservation landscapes versus production landscapes.

This article argues that the decades-old labour relationship between *adivasis* and the Indian Forest Department has had a considerable impact on the way forest-dwelling communities engage with the forest and its animals, as well as on how their life is organised within the non-human environment. As Tim Ingold (1993) points out, people's relationship to the landscape they live in depends largely on the tasks that they perform in that environment. Following Arturo Escobar, I understand the forest worker's knowledge of the forest environment as a «situated practice» (Escobar 1995: 624) that is created through their personal experience as forest workers, their intense daily interaction with the forest environment and their «inhabiting» of that environment (Ingold 2000). Thus, as Jack Kloppenburg points out with respect to «local knowledge», the forest labourers' knowledge is characterised by an «inseparability from a particular place in the sense of embeddedness in a particular labor process» (Kloppenburg 1991: 537)

To date, little anthropological attention has been paid to the labour and environmental knowledge that is needed to manage and maintain the world's conservation zones (Sodikoff 2012). Scholars studying the political ecology of conservation landscapes have elaborately shown how coercive state control of natural resources and regimes of conservation have radically altered the relationships between humans and their environment in many parts of the globe (Adams and Hutton 2007; Agrawal and Redford 2009; Brockington *et al.* 2008; Cronon 1996; Neumann 1998; West 2006). The disruptive impacts of conservation projects on local and indigenous communities have resulted in the enclosure of commons and the eviction of resident people from protected areas (Gadgil and Guha 1992; Guha 1997; Rangarajan 2006). In India, recent years have witnessed large numbers of people being relocated from national parks and newly designated critical wildlife habitats (Kothari and Pathak 2012), with severe consequences for peoples' livelihoods and cultural, social, economic and political relations (Ghate 2005; Rangarajan and Shahabuddin 2006). South Indian historians have carefully documented how the colonial extraction of resources entailed the dispossession of *adivasis* (Bijoy 1999; Kjosavik and Shanmugaratnam 2007; Kunhi Krishnan 1995). Yet, as this paper shows, beneath this well-known history of accumulation by dispossession (Harvey 2005) lies a silent history of labour, stretching back to colonial times, which has seen *adivasis'* low-paid manual work as well as their practical skills and intimate place-based knowledge of the forest environment exploited for forest and wildlife management and appropriated by the Forest Department.

To emphasise the role that forest work has played in shaping the lives of Wayanad's forest dwelling *adivasis*, I take the narratives, life stories, memories and oral histories of indigenous forest workers as my point of departure.

This article draws primarily on ethnographic data collected during various periods of fieldwork between 2009 and 2013. I begin by examining the silent role that *adivasis* have played in extracting timber from Wayanad's forests from colonial times until around the 1980s. I then outline the historical labour relations between *adivasis* and the Indian Forest Department which I characterise as a more-than-human association. As becomes clear, not only subaltern labourers, but also captured and trained elephants have been essential for establishing colonial control over this remote forest region. Following the historical account of forest labour, I offer an ethnographic overview of the tasks that *adivasi* forest workers carry out in the contemporary conservation environment. In so doing, I call attention to the way in which the forest workers' marginal position in Kerala's forest governance has shaped their daily lives and their relationship to the forest. By way of conclusion, I reflect on some of the insights that might be gained by thinking about forest labour as constitutive of *adivasis*' subjectivities. I also illustrate how the hybrid production of environmental knowledge through subaltern forest labour offers the opportunity to re-think the binaries of «indigenous environmental knowledge» versus «scientific knowledge», and of «nature» versus «culture».

ADIVASIS AS WORKERS IN COLONIAL FORESTRY

During pre-colonial times, in Wayanad, as in other regions of India, uncultivated forestlands generally served as open-access commons (Bashir 2000; Gadgil and Guha 1992; Rangarajan 1996). Although the region's *adivasi* groups were tenants-at-will under a complex landlord chieftain-regime, which required them to pay tribute to local high-caste landholders (*jenmis*) and kings in the form of forest produce like honey, medicinal plants, forest tubers and bamboo (Kjosavik and Shanmugaratnam 2007), they continued to enjoy access rights to the forest until the arrival of the British.

For centuries, Wayanad was mostly inhabited by *adivasis* and a small elite made up of landlord groups such as Jains (Gauder) and Hindu high-caste Nayar, Nambiar and Wayanad Chettiar, who all cultivated paddy (rice) with the help of bonded labourers, mainly from the Paniya and Adiya *adivasi* groups.² Paniya and Adiya also served as labourers for «high-caste» *adivasis* such as the Mullu Kuruma and Kurichiyas, who practised peasant cultivation on communally owned land. In eastern Wayanad, these wetlands were surrounded by forest up until the 1950s. The forest was customarily used by the Chettis and *adivasis* for hunting deer, boar and other small mammals. Additionally, Chettis and Mullu Kurumas grazed cattle on the forest's pastures for grazing. Forests also provided the sole source of livelihood for the non-sedentary forest-dwelling Kattunaikas, who collected mainly tubers, medicinal

² *Adiya* (from the Dravidian *adiyaan*, «foot») literally means «slave» in Malayalam.

plants and wild honey, and for the Urali Kurumas, who occasionally used the forest for swidden cultivation and as a source of clay to make pottery.

The British East India Company discovered the wealth of teak in South Indian's Malabar region as early as 1805. The forests of Wayanad, then a part of Malabar district, had the potential to provide the British Empire with abundant timber, which the colonial government needed for warfare, shipbuilding and railway construction (Grove 1995: 391). The British had already laid claim to Wayanad following the victory over Tipu Sultan of Mysore in 1799. However, the remoteness of the region, its harsh climatic conditions, the presence of malaria and a complicated land tenure system under the influence of Hindu *jenmis* made it difficult for the British to establish bureaucratic control over and large-scale commercial exploitation of the forest until the late nineteenth century (Bashir 2000; Kjosavik and Shanmugaratnam 2007).

After the British conquest, Malabar came under *zamindari* settlement, which meant that the old feudal rulers of the country and the high-caste landlords (*jenmies*) were bestowed with absolute ownership rights. This was in contrast to the indirectly ruled princely states of southern Kerala, Travancore and Cochin. In the Malabar region, a complex pre-colonial set-up of differential landholding rights held by different castes was transformed into a system in which large tracts of cultivated and uncultivated land were made the private property of high-caste landlords (*jenmies*) at the expense of all other agrarian castes, including *adivasis*, and their customary rights to cultivation and occupancy.

In Wayanad, unlike in other South Indian regions, even uncultivated forestland was recognised as the private property of *jenmies*, and thus the legal category of «private forest» was created alongside the «reserved forests» of the Forest Department. Forested land belonging to Hindu temples which had been given as royal endowments (*devaswom*), in particular, fell into this new legal category. In the case of south-eastern Wayanad, however, the claim by the Nilambur Raja to ownership (*janmom*) rights over forest land was rejected by the British. These tracts then became «revenue land» also known as «government *janmom*», under the custody of the Revenue Department. Wayanad's forests were thus divided into different legal categories, encouraging deforestation, encroachment or exclusionary protection.

When forest reservations were established in Wayanad in 1885, following the enactment of the Madras Forest Act in 1882³ (Bashir 2000; Brandis 1897; Premachandran Nair 1987), Wayanad's forest-dwelling *adivasis* experienced what historians have described as «colonial» or «bureaucratic» modernity (Skaria 2003: 234). The latter was based closely on the Indian Forest Act of 1878, through which the British imperial government brought wide areas of

³ For a more detailed account of Wayanad's pre-colonial forest history, the *jenmi* land tenure system and land rights in Wayanad, see Bashir (2000).

forest commons under direct state control by declaring them «reserved forests». The empire's aim was to maximise timber extraction without exhausting overall timber stocks.

Forest «conservation» was thus initiated with the purpose of securing the future supply of timber and augmenting the number and density of species with commercial value (Sivaramakrishnan 1999: 215). With the introduction of bureaucratic modernity and «scientific forestry» to Wayanad, forests were surveyed, mapped and divided into administrative units, and monoculture plantations of valuable hardwoods, primarily teak, were established as sources of revenue for the imperial state (Brandis 1897; Coode 1930).

Through this enclosure of extensive forest tracts, many of Wayanad's heterogeneous *adivasi* groups lost their customary community rights to the forest. Almost overnight, they became illegal occupants on their own land, forcing them to relocate into uninhabited and less accessible forest areas (Bijoy and Raman 2003; Steur 2009). Moreover, their traditional use of the forest was criminalised by the colonial forest officials and depicted as highly «destructive» (Logan 1887: 27). When the practice of shifting cultivation became a punishable offence, *adivasis'* claims to the forest were reduced to the collection of minor forest produce (Premachandran Nair 1987: 205). As few of the forest-dwelling groups possessed land titles (*patta*), there was no other choice but to work as forest labourers for their livelihood.

The British employed Wayanad's so-called jungle tribes to extract valuable teak from the remote forest areas (Premachandran Nair 1987: 25) and, when natural timber became scarce, to establish timber plantations for commercial use and revenue intake by the colonial Forest Department. The large-scale exploitation of forest resources was dependent on the expertise and low-paid labour⁴ of the «Kattunaika», former hunters and gatherers, who are alternatively called Nayaka, Kurumba or Jenu Kurumba in neighbouring regions and by different authors.⁵ Kattunaika were familiar with the forest environment and its animals and were also the only source of labour in the interior forest areas (Premachandran Nair 1987: 205). Anthropologists have largely highlighted the «animistic» or «relational ontologies» of hunting and gathering Kattunaika, that determine their ways of knowing and dwelling (Bird-David 1990). The role of forest labour in the lives of these forest dwelling groups, however, is largely invisible in the ethnographic and historical literature (Bird-David 1987, 1990; Demmer 1996). This is somewhat surprising, as people's relationship to the physical landscape they inhabit and their perception of the

⁴ As Premachandran Nair states in reference to colonial forest management, «the wage rates of the tribals were nominal when compared to the rate of other local labour» (Premachandran Nair 1987: 205).

⁵ In census reports, manuals and working plans of the Indian Forest Department *adivasis* were often given the generic expression «Kurumba» (Chettiar 1965; Coode 1930; Innes and Evans 1908) which covers all of Wayanad's heterogeneous tribal groups (Bashir 2000). Here, the term primarily refers to Kattunaika and Beta Kuruma.

non-human world is essentially based on the tasks that they perform in their environment (Ingold 1993).

In the case of Wayanad, forest labour was a more-than-human occupation. In Wayanad's rugged and often inaccessible forest terrain, colonial timber extraction could not have been undertaken without the power and agility of trained elephants, called *kumkhis* in Malayalam. As William Logan, a Scottish officer in the Madras civil service who served as collector of Malabar, stated in his *Malabar Manual*, «The wild elephant is the most important animal of the district. Without his assistance, when domesticated, it would be difficult indeed to work the forests» (Logan 1887: 58). In 1885, the British started using Kattunaika labourers for the large-scale capture of elephants in trapping pits (Premachandran Nair 1987). Soon after, elephant-training centres (*anapanthi*), each holding up to sixty animals, were established in Begur, Tholpetti, Muthanga, Chetalayam and other parts of Wayanad.

WORKING WITH ELEPHANTS

When Wayanad's forest areas became subject to the extraction-oriented management regime of the colonial Forest Department, human-environment relations in the region, especially the relationship between Kattunaika and elephants, were radically altered. Amongst the Kattunaika, the art of training and handling elephants, often described as a «tribal tradition» (Krishnamurthy and Wemmer 1995; Lair 1997), only came into being during the colonial encounter. Tribal workers, elephants and mahouts were not only economically essential for colonial logging and timber production; they also helped «tame» the unruly forest landscape through their labour activities. The wide-stretching teak and eucalyptus plantations that cover large parts of the present-day Wayanad Wildlife Sanctuary are the environmental legacy of this little-publicised collaboration between forest dwellers and forest animals.

The history of elephant husbandry in India can be traced back to as early as the third millennium BC. For centuries, these large mammals were valued for their use in warfare, transportation, hunting and timber extraction (Daniel 1998; Lahiri Choudhury 1999; Sukumar 2003). Two of the major Indian epics, the *Mahabharata* and the *Ramayana*, make mention of how elephants were exchanged as gifts, traded, trained and used in warfare (Hart and Sundar 2000). In the Wayanad area, local kings and rulers – namely the *Kottayam Raja*, *Nilambur Raja* and *Tipu Sultan* – as well as some of the higher landowning castes, such as the *Nayars* and *Mapillars*, were already practising the capture of elephants in trapping pits before the arrival of the British (Krishnamurthy and Wemmer 1995; Logan 1887: 58).

In pre-colonial times, the majority of mahouts were Hindus and Muslims, not «tribals». These mahouts did not live in the forest regions, but trained and took care of the elephants in the grounds of the royal palaces, where they

stayed with the rest of the palace staff (Hart and Sundar 2000: 36). In fact, it has been claimed for other areas of the Western Ghats that there were few *adivasis* working as mahouts before 1972, when, following the creation of the Nagarahole National Park, the Forest Department offered new jobs to the communities who had been relocated and thus deprived of their customary livelihoods (Hart and Sundar 2000).

The large-scale capture of wild elephants was introduced to South India by the British, using the North and North-East Indian practice of *khedda*, where herds of elephants were driven into enclosures or corridors and subsequently seized (Krishnamurthy and Wemmer 1995). The first *keddha* in South India, which was carried out in the forests of Mysore was carried out under the colonial officer G. P. Sanderson, who recorded some of the local capturing practices in his journal (Sanderson 1879). In Wayanad, however, the ruggedness of the terrain meant that trapping pits were the exclusive technique for elephant capture. Thus, in order to extract timber from this remote and malarial forest region, the colonial officers depended on the skills and environmental expertise of local *adivasis* to train wild *elephants*.

HUNTERS AND GATHERERS AS CONSERVATION LABOURERS

Kattunaika men were recruited by colonial forest officials to capture and tame wild elephants and to handle them as labour animals (Logan 1887; Premachandran Nair 1987: 205). My elderly informants in Wayanad recounted how it was precisely the Kattunaika's way of living in and with the forest environment that made them ideal elephant mahouts and forest workers, especially their ability (*ulkalcha*) to closely watch and understand animal behaviour. In order to survive in the forest environment, the Kattunaika carefully studied the predatory habits of different animals and scavenged on their catch. Some animals, like tigers and leopards, tend to gorge themselves at a kill, such that they may not need to eat again for several days. After feeding, they cover the remains of their prey with plant debris to conceal them from scavengers and then leave them alone for a day or two (Ramesh *et al.* 2009; Schaller 1967; Seidensticker *et al.* 1999). The Kattunaika were well aware of this behavior and were quick to make use of it. As soon as they heard a prey animal's call of distress or monkeys (like langurs and lion-tailed macaques) announcing the presence of a tiger or a leopard, the Kattunaika would begin to track the predator. Once they had the latter in their sights, they would follow it through the forest and wait for it to seize its prey. Then, after the predator has finished feeding, they would emerge from their concealed position in the undergrowth to take their share of the catch.

Thus, during my fieldwork, none of the Kattunaika actually called themselves former «hunters», as they are generally referred to in the ethnographic literature (see e.g. Bird-David 1992). They did, however, trap small animals

like rabbits, fowl and lizards, and used slingshots and sticks primed with sticky sap to catch birds (*kola lol*). Additionally, the Kattunaika have traditionally been excellent honey collectors, a skill that they retain to this day (Demmer 1996). According to my interlocutors, no other *adivasis* knew the forest and its animals like them; they were thus the preferred field staff of the Forest Department.

In contrast, the forest officials I interviewed during my fieldwork primarily ascribed the Kattunaika's historical association with the Forest Department to the former's traditionally non-sedentary lifestyle. Since the working elephants travelled from one camp to another for timber work, the mahouts and their families had to move along with them. This was a realistic prospect for the Kattunaika, who, unlike other *adivasi* groups in Wayanad, did not practise settled agriculture. In the early days of colonial forest governance, the Kattunaika forest labourers and mahouts lived in small self-erected huts inside the forest, close to where they worked on the plantations. Most of the *adivasi* colonies that today lie adjacent to the Sanctuary, such as Muthanga's Elephant Camp Colony, originated during British times, when forest labour was in high demand.

Despite being employed by the Forest Department, the Kattunaika continued to depend on the forest for food and building materials. Their practice of shifting cultivation had been criminalised very soon after the British assumed control over the region (Logan 1906: 227), but in the first two years after a tract of forest was turned over to teak plantation, *adivasis* were allowed to cultivate *ragi* (millet) and wild tubers in between the small seedlings. At the same time, they were able to secure a steady supply of protein by trapping small animals, hunting birds and scavenging from the kills of leopards, tigers, wild dogs and other carnivores.

As commercial timber extraction continued after Independence in 1947 under the postcolonial Forest Department, many of the Kattunaika elders can remember a time when elephant capturing was still practised in the forest, hunting was allowed and timber work was readily available on the wide-stretching plantations (*coupes*) of teak, rosewood and silveroak. According to the former mahouts I spoke with, prior to the 1980s most Kattunaika men were employed by the FD. It was only when the Indian government shifted its management paradigm from extraction to conservation that the majority of these men found themselves out of work.

Consequently, instead of «working for the forest», most forest labourers had to leave their colony at the sanctuary's boundary to find what was known as «outside work». Today, most Kattunaika men work as tea or coffee plantation labourers on Wayanad's estates, or they are employed in the speculative ginger(-growing) industry in the neighbouring state of Karnataka (D. Münster Forthcoming). Only around eighty-five *adivasis* remain in a seasonal working relationship with the Kerala Forest Department, the majority of

them Kattunaika. They work to pursue India's challenging conservation goal of preserving large and potentially dangerous mammals in a densely populated and fragmented landscape.

WORKING FOR «PROTECTION»

The formation of the Wayanad Wildlife Sanctuary (WWS) was a critical turning point in the lives of most Kattunaika. From being forest dwellers and workers on commercial teak plantations, they were now charged with the task of «protection» (*samrakshnanam*). Roja, a 65-year-old mahout, recalled this sudden shift as follows:

In those days the government [*sarkar*] told us that they had established an animal centre [*vanyamrnga kendram*],⁶ and that we have to protect wildlife [*vanyamrnga samrakshnanam*]. Before there was a lot of meat for us to collect in the forest. Those were the good times. We had a good life [*nalla vidu*]; we had millet [*sombu/ragi*], but we could also go for hunting and honey collection; there was no shortage of food or of labour. Now things have changed. ... Now we are buying everything. We cannot touch animals now. If they see us doing anything against the animals, they take us to jail. Now we ourselves stop people going into the forest. If we see any person hunting inside the forest we will inform the officer. If you do something wrong we will also take you to the officer. The government is also using our service for this [*nankalude sahayam upayogikkum*].

Like many of his fellow workers at the sanctuary, Roja became a low-paid worker under the rigid legal regime of Indian forest conservation.

Coercive environmental control of the WWS intensified in the mid-1980s. The sanctuary, which covers an area of some 344 km², was already formed in 1972. However, in this region of the Western Ghats, the Indian Wildlife Act (*vanniyajēvi samrakshanam*) was only strictly implemented when WWS became part of UNESCO's Nilgiri Biosphere Reserve upon the latter's creation in 1986. Thereafter, hunting was declared illicit poaching and was increasingly persecuted, possessing weapons became illegal and cultivation by the Kattunaika and other *adivasis* was also prohibited. In addition, the Forest Department's clearfelling of primary forest for eucalyptus plantation was suspended following protests by local environmentalists, resulting in a decline in labour opportunities for the region's *adivasis*.

The amendments to and stricter enforcement of India's postcolonial forest laws in the 1980s brought far-reaching transformations for forest-dwelling *adivasis*. Above all, they altered the latter's relationship with the non-human animals at the sanctuary, particularly with highly endangered species like elephants. Before 1977, elephants were listed under Schedule-II (Part-I) of the Wildlife Protection Act, which meant that they were «special game» and

⁶ *Mrunga kendram* literally means «animal centre» in Malayalam.

could be killed, captured or traded commercially by the Forest Department and individuals with a license. That year, however, the elephant was brought under Schedule-I of the Act, which made its capture illegal. Since then, the number of elephants in possession of Kerala's Forest Department has dropped significantly (Varma *et al.* 2009).

Despite their dwindling population, captured and trained elephants (*kumkhis*) continue to play an important role in the Sanctuary's conservation practices. Scientists, forest officials and wildlife veterinarians are dependent on them for gaining access to remote areas, conducting wildlife censuses, treating injured animals and, in particular, mitigating the severe human-animal conflicts that occur at the densely populated forest fringes. Consequently, elephant mahouts remain key players in the governance of Wayanad Wildlife Sanctuary, despite scholars having described the rapid disappearance of this tradition throughout South Asia (Lair 1997; Radhakrishnan *et al.* 2011). Of primary importance is their role as intermediaries between the local flora and fauna, the higher forest officers and conservation «experts», who are usually «outsiders» and thus unfamiliar with the ecological specificities of the region. As Chandran, a Kattunaika mahout, explained to me:

The government people [*sarkar mar*] call us because we are *Kattunaika*.⁷ Our people know the forest [*namale jati kadariyam*]; we know each and every path through the forest; we know about the behaviour of the animals. Officials will not even enter the forest without us.

Despite such self-confident proclamations of the part that Kattunaika play in the sanctuary's management, *adivasi* labour remains largely invisible in official representations of biodiversity conservation.⁸ Both the Indian Forest Department and transnational environmental NGOs rely heavily on the unseen work of *adivasis*, yet these workers occupy the lowest level of the Forest Department's hierarchy and receive little remuneration and even less recognition for their work and skills.

Over the last six decades, Wayanad's forests have from sites of commercial timber production to a post-industrial conservation landscape, where wildlife is turned into a marketable asset in the growing tourism industry and conservation biologists study the challenges posed by interspecies proximity (D. Münster and Münster 2012). Yet, despite these developments, the bureaucratic organisation of the Forest Department, including its division of the for-

⁷ *Kattu* is the Malayalam word for forest. The term *naika* is thought to be derived from the Sanskrit *nayaka*, meaning «leader».

⁸ With the expression «invisible labour», I draw a parallel with feminist critiques of capitalist production, which have employed this term either to draw attention to the dependence of modern economies on unpaid female domestic and reproductive labour (Collins and Gimenez 1990; Mies 1986) or to make an argument for recognising marginalised sex work as an «invisible» form of labour (Kotiswaran 2011).

est into administrative units, has remained almost unchanged since colonial times. Wayanad's Wildlife Division, headed by the Wildlife Warden, is divided into four ranges: the Tholpetty Range, the Kurichiat Range, the Sultan Battery Range and the Muthanga Range. Each range is supervised by a Range Forest Officer (RFO) and divided into different sections, which are managed in turn by Forest Section Officers. Each section is further divided into beats under the control of a Forest Guard, who is himself senior to the forest watchers, who occupy the lowest level of the Department's hierarchy.

Most of the workers are employed as «anti-poaching camp watchers» (APC-watchers), who guard the forest against ivory poachers and smugglers and the so-called sandalwood mafia. «Our work is protection», explained Raman, one of the forest watchers in the Muthanga range. «On our beat walks, we comb the forest for incidents of poaching, any incident of animal death or disease and any unusual thing in the forest, and we report it directly to the Forest Guard, our superior». At night, the watchers sleep in one of the 22 small thatched huts deep inside the Sanctuary that were established as «anti-poaching camp sheds» during the 1990s, when protection was intensified to curb the rampant ivory poaching in the area. Only occasionally are the watchers able to visit their families, who live in government housing colonies at the Sanctuary's border.

The Forest Department's administrative structure is such that it inevitably depends on local watchers for «protection work». Officials in the higher echelons of the Forest Department rarely serve at one field station for longer than three years. After this period, they are transferred to other forest ranges in the district or even to other districts in Kerala. Upon their arrival in these new and unfamiliar surroundings, they are often wholly dependent on the local expertise of the watchers to guide them through the Sanctuary's rugged forest terrain.

The officers need assistance from these local workers in order to track the species in the forest, find injured or deceased animals, identify unknown flora and fauna, perceive environmental changes, conduct the animal census and report offences. Varghese, a forester who accompanied me to an anti-poaching camp, gave the following appraisal of the watchers in his forest section:

We could not do without them. They know each nook and cranny of the forest; they can guide us safely to any part of the forest through many routes. They have an inner ability [*ulkalcha*], an inner vision [*grehikia*]. They recognise the elephant paths [*aana thara*] and also they have a sense of wild animals and know how to avoid conflicts. If higher officers come, they accompany them, so that the latter can move about easily; they cut the branches with a knife, cut the grass, bamboo, so the government people can walk freely.

Ravan, a young Kattunaika watcher, explained that he had acquired the skills for his job from his childhood spent living in the forest:

Even when we were young there were animals in the forest and sometimes elephants used to attack. So we learned to closely observe the animals; we can tell even from the smell in the forest where the animals are. When a tiger is close, there is a smell of blood in the air as he hunts prey. The elephant smells of decayed leaves, and if there is an elephant in the forest with *musth*,⁹ we can smell that over a long distance. We can tell the mood of an elephant. If an elephant stands still and does not move his ears, but just turns his tail, we have to be careful. If it scrapes its feet in the mud it is angry. So if we see that an individual animal could cause trouble, we would stay away from it, not pass by. In case of an attack, if it charges [*upadravikuuka*], we, the Kattunaika, can climb trees. Other people can't do that. Even our children learn to climb trees.

Ravan was quite aware that the watchers play an important role in ensuring the forest staff's safety, especially as human-animal conflicts in the Sanctuary have increased in recent years, as he explained:

Now the number of animals has grown in the forest. Animals also have become more aggressive [*akramikkunnathu*] and don't fear [*pedi*] the humans anymore. Animals have gradually become familiar with humans [*parichayamayi*]. So we have to be aware of their mood [*swabhavan*]. If the animal is not in a good mood, we have to keep our distance and don't do anything to provoke it [*prashnamundakkathathu*]. Let him go on his own way and do his own thing. We know about that, because we have only ever lived here.

As a consequence of the increasing risk the animals pose, neither wildlife biologists nor the Sanctuary's wildlife veterinarian enter deep into the forest without the escort of a Kattunaika watcher or mahout.

As well as drawing on local environmental knowledge, forest officials make use of technological innovations and infrastructure to solve the Sanctuary's pressing conservation problems, and to manage Wayanad's forests. Science and technology is implemented in the «making of modern wildlife» (Benson 2010): the Sanctuary's boundary is physically marked by high-voltage electrified fences and deep elephant trenches to protect the local farmers and their agricultural fields from incursions by wild animals; elephants (particular the crop raiders) are increasingly fitted with radio collars to track their movements via satellite; the wildlife veterinarian tranquilises injured or aggressive animals with expensive anaesthetic darts in order to treat or relocate them; following post-mortems, the veterinarian sends genetic samples from deceased animals for laboratory testing in order to better understand the epi-

⁹ *Musth* is a «rutlike condition in bull elephants» (Sukumar 2003) that causes aggressive behaviour in the animals due to elevated levels of testosterone. During *musth*, the elephant's temporal glands (located behind the eyes) swell and secrete the *musth* fluid, which has a very strong smell according to the mahouts. When in the state of *musth*, the captive elephant bulls are handled with extreme care. As one of the mahouts, Krishnan, explained, «They are like a drunkard during that time; they don't even recognise their own mahout (*papan*)».

demiological consequences of Wayanad's high species density; wildlife biologists install camera traps in different parts of the forest to find out more about the animals' behaviour and trails; and forest officials carry an electronic «elephant-scaring device», developed by a former Wildlife Warden, which deters crop-raiding animals by issuing a noise like a tiger's roar. None of these processes, however, are carried out without the support of *adivasi* workers.

Often, the forest labourers are charged with the most dirty or dangerous tasks in the Sanctuary. When a large mammal dies, for example, the mahouts, who work closely with the wildlife veterinarian on many jobs,¹⁰ are responsible for dissecting the carcass during the legally obligatory post-mortem. Krishnan, a senior mahout, vividly described this process: «I can't even eat for a whole week afterwards, because of the smell. I have to take a sip of alcohol each time before taking a bite». After the post-mortem, the remains of the animal must be burnt, a further unenviable duty of Krishnan and his colleagues.

Additionally, the mahouts are responsible for the risky job of mitigating human-animal conflicts. Farmers call the Forest Department when they find crop-raiding elephants in their banana, rice or coconut plantations at night. The mahouts respond to these calls, using their *kumkhi* mounts to drive the wild elephants out of the fields. «It is a hard and dangerous job», explained Rajan, another experienced mahout. He elaborated further:

We have to deal with such a large animal and its behaviour can change at any moment. Actually the job is 24 hours a day. Sundays are supposedly rest-days but we cannot say, «let the animal not eat anything today because it is a Sunday», so we have to work seven days a week. Our working days are 326 days in a year and 24 hours per day. But the wage is calculated only for 20 days a month, as 334 rupees per day.

The position of conservation labourers on the lowest level of the Forest Department's hierarchy has changed little since colonial times, despite the World Bank-funded introduction of «participatory forest management» to India in the 1990s (Sundar 2000), and the recent implementation of the so-called «Forest Rights Act» (Government of India 2006) that had raised the hope of activists and academics to bring more democratic and inclusive forms of environmental governance to India's forests (U. Münster and Vishnudas 2012).

In Wayanad, forest workers are subject to ongoing structural inequalities and the «structural violence enacted through the everyday practices of bureaucracies» (Gupta 2012: 33). In the case of Kattunaika, this violence manifests itself in precarious labour relations, caste discrimination and low and unpredictable wages that are paid with great delays. Indirectly, their subjection

¹⁰ The mahouts provide back up when the veterinarian has to tranquilise the animals. They also take the wildlife vet deep into the forest on *kumkhi* elephants, especially during the rainy season when the jeeps cannot travel on the muddy forest paths.

to structural violence and the devaluation of their capabilities (Devika 2010), skills and knowledge give rise to communal poverty, undernourishment and other health issues and, among many of the forest workers and mahouts, a growing dependence on alcohol. The workers frequently complained that their efforts for maintaining Wayanad's so-called wilderness remain unrecognised, and that their abilities and accomplishments, on which the authorian environmental regime depends, are silenced.

CONCLUSION

This article began by emphasising the often overlooked historical and contemporary centrality of wage labour in the lives of the so-called hunting and gathering Kattunaika. It then pointed to the role of human and elephant labour in creating and managing Wayanad's conservation landscape. I showed how in this process Kattunaika's environmental knowledge has served as a form of immaterial labour that facilitates the creation and management of a site for the protection of India's highly endangered iconic national animals, including the tiger, the elephant, the leopard and the gaur. As the previous analysis demonstrated, however, the workers occupy a marginal position at the foot of the Forest Department's hierarchy.

As a consequence of their marginality, adivasis' involvement in forest conservation has not turned them into «environmental subjects», that is, people for whom «the environment is a conceptual category that organizes some of their thinking and a domain in conscious relation to which they perform some of their actions» (Agrawal 2005: 162) as Arun Agrawal characterises the farmers in Kumaon, North India, who have become active environmentalists through their participation in neoliberal conservation initiatives. Rather, Kattunaika men working for the Forest Department encounter an «institutional devaluation that molds subjective experience» in their daily lives (Sodikoff 2007: 12). For them, the «environment» is not part of their conceptual vocabulary, nor do they identify themselves as environmentalists. Instead, Wayanad's forest workers speak of themselves as *kuli panikkar* – wage workers for the government. When talking of «the forest», Kattunaika refer to the land owned by the Indian Forest Department, not the biophysical features of a forested landscape. Likewise, the «forest people» are the officials in khaki uniforms and hats who control, manage and govern the state-owned forestland.

In the power-laden and unequal encounter between forest labourers, state officials and conservation experts, a relational knowledge about Wayanad's environment is produced. The Kattunaika take on the position of intermediaries. During their work in conservation, they interact with elite scientists, biologists and state officials. Thereby, different matrixes of knowledge meet, get blurred and are negotiated. As this paper has shown, conservation and

governance at the sanctuary depends on these processes of translating and disseminating of environmental knowledge. By emphasising the interrelationship between Kattunaika workers, elephants, forest officials and scientific experts and highlighting the labourers' (invisible) role in environmental management, this article ultimately contributes to a wider effort to move beyond established binaries of indigenous/traditional knowledge versus scientific knowledge, hunters and gatherers versus wage labourers and conservation landscapes versus production landscapes, and thus also of humans versus nature.

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COMPOSTO IN CARATTERE DANTE MONOTYPE DALLA
FABRIZIO SERRA EDITORE, PISA · ROMA.
STAMPATO E RILEGATO NELLA
TIPOGRAFIA DI AGNANO, AGNANO PISANO (PISA).

★

*Finito di stampare nel mese di
Dicembre 2015*

(CZ 2 · FG 21)



★

Periodico iscritto alla Cancelleria del Tribunale di Roma
in data 7 marzo 2006 n. 121/06
RAFFAELE TORELLA, *Direttore responsabile*
Periodico già registrato in data
30 aprile 1958 n. 6299