

## **Socio-Economic Status of Elephant Keepers (Mahouts) and Human–Captive Elephant Conflict: A Case Study from the Three Management Systems in Tamil Nadu, Southern India**

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### **Introduction**

The Asian elephant is an integral part of the culture and mythology of India and elsewhere in Asia. Captive Asian elephants constitute about 22–30% of the remaining Asian elephant population (Lair 1997; Sukumar 2003). India is home to about 3400–3600 captive elephants (MoEF 2004). Traditions of elephant-capture, taming, keeping, handling, and employing for work still exist in almost all Asian countries. Unlike the west, Asian elephant-keeping traditions often have strong links to particular communities (Krishnamurthy 1998). Despite the long history of keeping elephants, managing captive elephants, especially adult males, has been an equally difficult task in places like western zoos, as well as Hindu temples and private owners of India (Sukumar 2003). In Tamil Nadu, a southern state of India, 135 captive elephants are being managed by the State Forest Department, religious institutions such as Hindu temples, as well as mutts, trusts, charities, mosques, and individual owners, for various purposes (Vanitha 2007). The Government of Tamil Nadu categorized these elephants into three captive systems—Forest Department captive elephants (managed at timber camps and zoo), temple elephants (managed at Hindu temples), and private elephants (managed by mutts, trusts, charities, mosques, and individual owners).

Elephant-keepers, locally called ‘mahouts’, manage the captive elephants on a day-to-day basis. The standard of living and welfare status of such mahouts have been diminishing, as the importance of captive elephants has dwindled over the years. The Ministry of Environment and Forests, Government of India, realizing the importance of mahouts in captive elephant

management, and concerned about their quality of life, impressed upon the state governments to standardize the mahout salary across management systems and give pay equal to the scale of Light Motor Vehicle Drivers (MoEF 2004). Unfortunately, there is still wide disparity in monetary benefits among mahouts in the three management systems in Tamil Nadu. As per the veterinary expert’s suggestion, elephants above five years of age are to be attended by two persons: the mahout, a person experienced in handling elephants; and an assistant mahout or ‘cavady’. Elephants up to five years of age (except suckling calves) are attended by a single person, the cavady (Krishnamurthy & Wemmer 1995). Nevertheless, the number of mahouts per elephant found in temple and private systems is still less than the desired and recommended number. With an insufficient number of mahouts, welfare standards are decreasing both for the mahouts and the elephants. This, in turn, could negatively affect the relationship between mahouts and elephants, increasing human casualties by captive elephants. In this paper, we report on: (1) the economic standard and welfare status of mahouts in terms of monetary compensation and the number of mahouts per elephant, and (2) the human casualties caused by captive elephants during 2003–05, across three management systems in Tamil Nadu.

### **Methods**

The study was carried out in Tamil Nadu, which has many Hindu temples where elephants are traditionally worshipped and held in high esteem. To assess the welfare status and economic standard of mahouts among the three captive management systems, we gathered data on the number of

mahouts per elephant, their background and monthly salary, by enquiring from the mahouts as well as verifying with the concerned authorities through an extensive survey during 2003–05. Data on the number of human casualties caused by the 135 captive elephants held presently was obtained by scrutinizing the official records available, together with information from mahouts.

Using Chi-square analysis, we tested the number of attending mahouts per elephant in each system, against the number required for each system, as per the veterinary expert’s suggestion. Monthly salary paid per mahout and assistant mahout across three systems was tested using One-way ANOVA. The proportion of traditional versus non-traditional mahouts in each system was tested using a proportion test. Since the total number of captive elephants managed and the duration of their stay in the present facilities were not uniform across the three systems, we calculated the rate of human casualty/elephant/year for each system separately using data on total number of human casualties and total elephant years (total duration of stay of all the elephants in the present facilities) in each system. In this paper, hereafter, the terms mahout and assistant mahout (cavady) are referred to as mahouts collectively unless differentiated.

## Results

### *Number of mahouts per elephant*

The number of mahouts per elephant did not vary much from the required number for individuals

up to five years of age in all the systems, except a private institutional facility which had two mahouts instead of one (Table 1). Since the mahouts of the lactating cow elephants take care of the un-weaned calves, there was no separate assistant mahout for the calf in the age-class up to five years in the ‘private individual’ category, and similarly for two calves in the ‘Forest Department’ system. However, for elephants above five years of age-class, the temple system engaged a significantly ( $\chi^2=3.55$ ;  $df=1$ ;  $P<0.05$ ) lower number of mahouts/elephant (1.6) than required (2) while the shortfall of mahouts observed in the private ( $\chi^2=0.676$ ;  $df=1$ ;  $P<0.41$ ) and Forest Department ( $\chi^2=0.114$ ;  $df=1$ ;  $P<0.73$ ) systems were insignificant.

### *Mahouts’ monthly salary*

Mahouts and assistant mahouts were employed both on permanent as well as temporary basis. Those appointed on permanent basis had a pay scale break-up like any other state government employee, including a pension scheme, while the temporary mahouts were casual labourers, who were paid only a consolidated salary. The permanent appointment system prevailed only in Forest Department facilities and was not found in temples or in private systems. However, even in the Forest Department there have been no permanent appointments for over a decade now, and most of the vacancies are filled on a temporary basis with a consolidated salary of US\$ 24–30/person/month. Therefore, the mean monthly salary paid across the management systems varied significantly, both in the case of mahouts ( $F=43.38$ ;  $df=2$ ;  $P<0.001$ ) and assistant mahouts

**Table 1.** Status of mahouts working in different captive management systems in Tamil Nadu (M=mahout, E=elephant, MTB=mahout with traditional background).

Management system	N	Monthly salary <sup>a</sup>		% MTB	Age class	# E	# M	# M/E
		Mahout	Assistant					
Private - Individual	24	52 ± 23	49 ± 17	62.0	<5 years	1 <sup>b</sup>	0	0
Private - Institutional	10	64 ± 46	56 ± 23	63.0	>5 years	28	52	1.9
					<5 years	1	2	2.0
Temple	41	49 ± 27	33 ± 20	55.8	>5 years	9	15	1.7
					<5 years	1	1	1.0
Forest Department	5	114 ± 33	64 ± 35	83.3	>5 years	42	68	1.6
					<5 years	9 <sup>c</sup>	7	1.0
					>5 years	44	85	1.9

<sup>a</sup> = mean & SD in US\$ @ INR 50/\$

<sup>b</sup> = un-weaned calf without mahout or assistant mahout

<sup>c</sup> = includes two un-weaned calves without separate mahout or assistant mahout



**Figure 1.** An adult female in bath at the Timber camp of Anamalai Wildlife Sanctuary.

( $F=5.36$ ;  $df=2$ ;  $P<0.01$ ). The Forest Department paid higher salary for both the mahout (mean \$ 114/person) as well as assistant mahouts (mean \$ 64/person), followed by private institution (\$ 64/mahout and \$ 56/assistant mahout) and individual (\$ 52/mahout and \$ 49/assistant mahout) categories. The temple management paid the lowest monthly salary (\$ 49/mahout and \$ 33/ assistant mahout).

#### *Mahout background*

The mahouts and their assistants in the Forest Department are mostly from a particular hill-tribe community, which has a background of elephant capture and keeping as a tradition, unlike the private and temple systems. Inquiries of 80 facilities among the three systems revealed a major variation in the proportion of traditional mahouts, with the forest department engaging the highest number (83%) (Table 1) followed by private (62% individuals and 63% institutional categories) and the lowest number in the temple

system (56%). The proportion of traditional mahouts recorded was significantly higher than non-traditional mahouts only in the Forest Department ( $\chi^2=20.02$ ,  $df=1$ ;  $P<0.001$ ), but not in the private ( $\chi^2=1.24$ ,  $df=1$ ;  $P=0.265$ ) and temple ( $\chi^2=0.37$ ,  $df=1$ ;  $P=0.541$ ) systems.

#### *Human–captive elephant conflict*

The number of elephants that caused injury to human beings, and the rate of injury were higher in the Forest Department system (about 13% of elephants caused 18 incidences at the rate of 0.016 human injury/elephant/year) compared to the other two systems (Table 2). On the other hand, a higher proportion of temple elephants (9.3%) caused manslaughter (9 deaths) and the rate was also higher (0.01 incident/elephant/ year) than the Forest Department and private captive systems (Table 2). Most of the casualties in the temple system were the general public. Out of 18 cases of injury caused by Forest Department elephants, 17 (94%) were by six adult males, with four of them involved on more than one occasion (15 cases, 88%), revealing that some of the bulls are more unpredictable in nature. The other injury was caused by an adult female that was recently transferred from a Hindu temple due to difficulties in handling her.

Of two cases of manslaughter by Forest Department elephants, one incidence was by an adult female, transferred from a Hindu temple in 1995. The remaining case was due to an adult male at the onset of musth. The bull, while bathing in the river, on the mahout's command while lifting its head, hit the mahout's head with its tusk. The mahout died on the spot and the bull walked away into the nearby forest. The bull had to be tranquilized for chaining, as he was not obeying the assistant mahout and other mahouts.

**Table 2.** Human casualties by the captive elephants (E) in different management systems.

Management system	# E	Human injury			Human death		
		% of E involved	N	Rate/E/year	% of E involved	N	Rate/E/year
Private–Individual	29	0	0	0.000	0	0	0.000
Private–Institutional	10	10.0	1	0.007	0	0	0.000
Temple	43	11.6	8	0.009	9.3	9	0.010
Forest Department	53	14.1	18	0.016	3.8	2	0.002
Overall	135	9.6	27	0.011	5.2	11	0.004

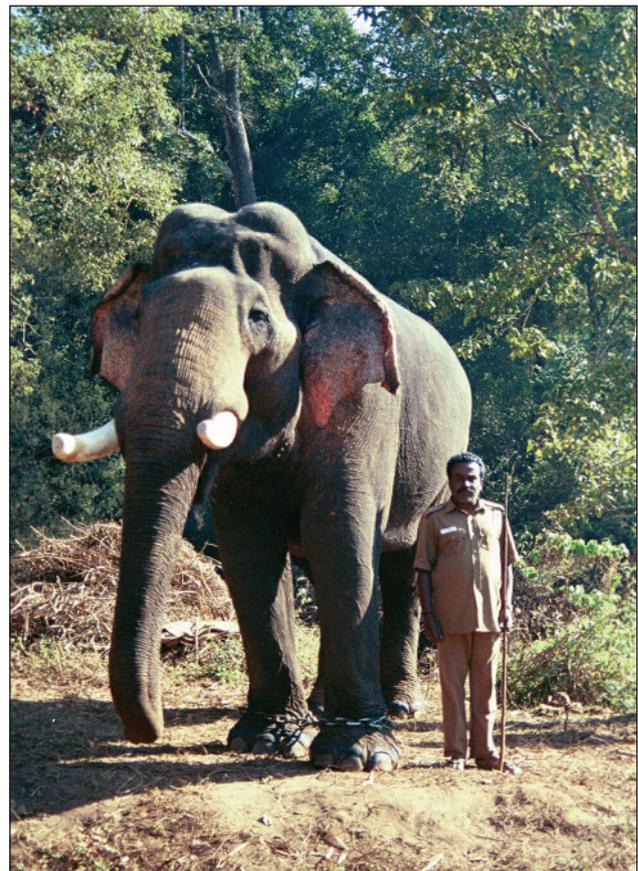
However, other mahouts who were bathing their elephants in the same location felt that the incident was an unintended one, as his mahout (victim) should not have given the command to the elephant to raise its head, while standing close to its tusk. Supporting the view of the other mahouts, the bull otherwise has no record of any human casualty, although he is known for aggressive temperament in the camp.

The results suggest that the human–elephant conflict, especially man-slaughter, was higher in temple systems (0.01 human death/elephant/year) compared to private and Forest Department systems, despite their managing mostly females (95%), which are easier to manage than adult bulls in captivity. This indicates inadequate competence of mahouts in the temple system.

### Discussion

The keeper's welfare is an indication of elephant welfare. The present study shows that mahouts in the temples and in some private systems are paid less than those in the Forest Department facility. To compensate for a lower salary, the mahouts in the private and temple systems burden the elephant with additional work. Blessing the devotees by the temple elephants, and begging at shops and residential places by the private elephants are income-generating work in these systems. Thus the captive elephants in private and temple systems are forced to perform such activities for longer periods to make up for underpayments (Vanitha 2007). Nevertheless, the mahouts in less popular/rural temples still do not make up the underpayments, as only poor devotees visit these temples and donate pittance.

As a result, the traditional mahouts are leaving these facilities and the elephants are increasingly left under the control of non-traditional mahouts. These non-traditional mahouts have less compassion and insufficient experience in handling these giants, and often mishandle them. The higher number of man-slaughters, mostly the public by temple elephants, could be attributed to the higher association of temple elephants with the public than those in the Forest Department. However, the virtual absence of human deaths by the private elephants, which are also associated



**Figure 2.** Kunkie ‘Kalim’ and V. Palaniswami his mahout, managed at the Timber Camp of Anamalai Wildlife Sanctuary.

with public while begging at crowded cities and towns, in fact, more than the temple elephants, suggests a lack of competence and safeguards among mahouts in the temple system. This could be attributed to poor handling of the elephants by non-traditional mahouts and their insufficient number/elephant. The higher proportion of injuries caused by the bulls in the Forest Department could be attributed to the sudden change in their behaviour during musth. The fact that, in spite of managing a large number of bulls in captive conditions, the Forest Department system experienced a very low proportion of man-slaughters compared to other parts of India (Panicker *et al.* 2003), reveals the competence of traditional tribal mahouts whom the system predominantly engages in the profession.

Unlike in the past, where mahoutry was a proud profession of a specialized class of people, the profession has now lost its charm due to the lack of comparable economic benefits and improper welfare measures owing to the dwindling

importance of captive elephants (MoEF 2004). Therefore, the art of mahoutry is dying at a fast rate and effective steps must be taken urgently to improve the economic status and welfare standards of mahouts through better pay, risk allowance, insurance policy, family accommodation, etc. as advised by the Project Elephant, Government of India (MoEF 2004). All facilities should strictly adhere to the norms of the Forest Department in regards to the number of mahouts per elephant. In the Forest Department, it was found that a large number of mahout positions were filled with casual labourers on a temporary basis. They need to be filled-up by permanent mahouts. The hill tribe community in southern India is specialized in elephant-capture, taming, keeping, handling and using for work - essential tools to manage problem elephants as well as the local abundance of elephants in the wild populations. Therefore, the traditional talent and competency needs to be retained with better economic and welfare standards, not only for the effective management of captive elephants but also for the management of wild elephant populations.

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**Figure 3.** Female on its way to bath at Rejuvenation Camp conducted for temple and private elephants at Mudumalai Wildlife Sanctuary.