

STATUS OF MAHOUTS AND HUMAN-CAPTIVE ELEPHANT CONFLICT IN THREE MANAGEMENT SYSTEMS IN TAMIL NADU, INDIA

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Introduction

The Asian elephant is an integral part of the culture and mythology of India and elsewhere in Asia. Elephants were probably first captured about 4000 years ago by the people of the Indus Valley civilization (Carrington, 1959). Captive Asian elephants constitute about 22-30% of the remaining Asian elephants (Lair, 1997, Sukumar, 2003). India is home to about 3400-3600 captive elephants, distributed across 23 states and union territories including Andaman and Nicobar Islands (MoEF, 2004). The elephants are found in the wild in 17 of the 28 states in India, captive elephants are found in non-range states as well, because of their role in the culture and religion of the country. 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, the tradition of managing captive elephants, especially adult males, has been a difficult task in many places like western

zoos, Hindu temples and private owners of India (Sukumar, 2003). Kerala, a southern state in India with a long tradition of keeping captive elephants, has recorded 274 cases of mans-laughter by captive elephants between 1989 and 2003 (an average of 10 man-slaughters year⁻¹), and such incidences are increasing in recent years (Panicker, *et al.*, 2003). Therefore, most temples in southern India (with the exception of Kerala) prefer to keep female elephants. On the other hand, the timber camps of southern India have been managing captive elephants including large number of adult males for over a century without many human casualties (Krishnamurthy, 1998).

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 by the Hindu

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Religious and Charitable Endowments (HR and CE) Board, Government of Tamil Nadu) 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. Their standard of living and welfare status are diminishing, as the importance of captive elephants is dwindling 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 government veterinary expert's suggestion, elephants above five years of age are to be attended by two persons; a *mahout*, a person experienced in handling elephants, and an assistant *mahout* or *cavady*; while the elephants up to five years of age (excepting suckling calves) are attended by a single person, the *cavady* (Krishnamurthy and Wemmer, 1995). Nevertheless, the number of *mahouts* elephant⁻¹ 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 affect the relationship between the *mahouts* and the elephants and increase human - casualties by captive elephants.

The present paper deals with the economic standard and welfare status of *mahouts* in terms of monetary compensation and the number of *mahouts* elephant⁻¹ and the human casualties caused by captive elephants during 2003-2005 across three management systems in Tamil Nadu, southern India.

Methods

Study area and data collection : The study was carried out in Tamil Nadu, a southern state of India, which is rich in 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* elephant⁻¹ their background and monthly salary, by enquiring the *mahouts* as well as verifying with the concerned authorities through an extensive survey during 2003-2005. Data on the number of human casualties caused by 135 captive elephants from the three systems were obtained by scrutinizing the official records available and enquiry of *mahouts*. The number of human casualties that include injuries and deaths caused by each elephant since its arrival at the present location or facility was collected, instead of for a particular year or study period, to have a larger database on human casualties.

Data analysis : Using Chi-square analysis, we have tested the actual number of attending *mahouts* elephant⁻¹ in each system, against the number required for each system, as per the veterinary expert's suggestion. Mean 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 proportion test. Since the total number of captive elephants managed and the duration of their stay in the present facility were not uniform across the three systems, we calculated the rate of human casualty elephant⁻¹year⁻¹ 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

Status of mahouts : 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 private system individual-owned category and similarly for two calves in forest department system. However, for elephants above five years of age-class, the temple system engaged significantly ($\chi^2 = 3.55$; $df = 1$; $P < 0.05$) lower number of

Table 1
Status of mahouts and assistant mahouts working in different captive management systems in Tamil Nadu, Southern India

Management system (# of facilities)	Age class of elephants	Total number of elephants	Total number of <i>mahouts</i>	Number of <i>mahouts</i> /elephant	Monthly salary (mean \pm SD in INR)		% <i>mahouts</i> with traditional background
					<i>Mahout</i>	Assistant <i>mahout</i>	
Private - Individual (<i>n</i> = 24)	Up to 5 years	1 ^a	0	0	2606 \pm 1127	2456 \pm 862	62.0
	Above 5 year	28	52	1.9			
Private - Institution (<i>n</i> = 10)	Up to 5 years	1	2	2.0	3221 \pm 2280	2780 \pm 1158	63.0
	Above 5 year	9	15	1.7			
Temple (<i>n</i> = 41)	Up to 5 years	1	1	1.0	2441 \pm 1363	1674 \pm 986	55.8
	Above 5 year	42	67	1.6			
Forest Department (<i>n</i> = 5)	Up to 5 years	9 ^b	7	1.0	5721 \pm 1664	3224 \pm 1772	83.3
	Above 5 year	44	85	1.9			

^a = un-weaned calf without *mahout* or assistant *mahout*, ^b = includes two un-weaned calves without separate *mahout* or assistant *mahout*.

mahouts elephant⁻¹ (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 non-significant.

Mahouts' monthly salary

There are *mahouts* and assistant *mahouts* both on permanent as well as temporary basis in Tamil Nadu. Those appointed on permanent basis have pay scale break-up like any other state government employees including pension scheme, while the temporary *mahouts* are casual labours, who are paid only a consolidated salary. The permanent appointment system prevails only in forest department facilities and is not found in temples, which are also a government department or in private systems. However, even in forest department there has been no permanent appointment for over a decade now, and

most of the vacancies are only filled on a temporary basis with a consolidated salary of Rs. 1200-1500 person⁻¹ month⁻¹. 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* ($F = 5.36$; $df = 2$; $P < 0.01$); Table-1. The forest department paid higher salary for both the *mahout* (mean Rs. 5721 person⁻¹ as well as assistant *mahouts* (mean Rs. 3224 person⁻¹), followed by private system of institution (Rs. 3221 mahout⁻¹ and Rs. 2780 assistant mahout⁻¹ and individual (Rs. 2606 mahout⁻¹ and Rs. 2456 assistant mahout⁻¹) categories. The temple management paid the lowest monthly salary (Rs. 2441 Mahout⁻¹ and Rs. 1674 assistant mahout⁻¹).

Although, the *mahouts* in the temple and some of the private systems (like the mutts and mosques) are paid a lower salary, they have additional earnings, on an

Table 2
Human casualties by the captive elephants in different management systems in Tamil Nadu, Southern India

Management systems (# of elephant)	Human injury		Human death	
	% of elephants involved	No. of times (rate elephant ⁻¹ year ⁻¹)	% of elephants involved	No. of times (rate elephant ⁻¹ year ⁻¹)
Private-Individual (n=29)	0	0 (0.000)	0	0 (0.000)
Private-Institutional (n= 10)	10.0	1 (0.007)	0	0 (0.000)
Temple (n = 43)	11.6	8 (0.009)	9.3	9 (0.010)
Forest Department (n = 53)	14.1	18 (0.016)	3.8	2 (0.002)
Overall (n = 135)	09.6	27 (0.011)	5.2	11 (0.004)

average about half of their monthly salary, through reward from the devotees when they seek the blessings of the elephants. However, such additional earnings are not uniform across all temples. Some *mahouts* in popular temples earn more than their monthly salary through blessings, but many others working for less popular temples do not earn enough. Unfortunately, such less popular temples also pay lesser salaries to their *mahouts* than the popular temples. Similarly, *mahouts* in mutts, a private institutional facility, and assistant *mahouts* of individual facilities are also paid less than the *mahouts* of private elephants owned by trusts, charities or mosques.

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, whose *mahouts* are drawn from different communities and are not necessarily from traditional background. 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 ($\chi^2 = 20.02$, $df = 1$; $P < 0.001$) and 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. Therefore, it is the temple system holding large numbers of elephants under non-traditional *mahouts*, who lack the traditional compassion and kindness, essential traits in handling these magnificent giants effectively without human casualties.

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⁻¹year⁻¹ or 1 human injury 144 elephants⁻¹) 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 is also higher (0.01 incident elephant⁻¹year⁻¹) than the forest department and private captive systems (Table 2). Most of the casualties in the temple systems were the general public. Out of 18 cases of injury caused by forest department elephants, 17 (94%) were by six different adult males, with four of them involved on more than one occasion contributing to major incidences (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 the two cases of mans-laughter 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, its tusk hit the *mahout's* head. 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*. 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 system (0.01 human death elephant⁻¹year⁻¹) compared to private and the forest department systems, despite the fact the system managing mostly females (95%), which are easier to manage than adult bulls in captivity indicating inadequate talent of *mahoutry* in temple system.

Discussion

The keeper's welfare is an indication of elephant welfare. The study results show 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 or at times overconfident while dealing with 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 with public while begging at crowded cities and towns, in fact, more than the temple elephants, suggests a lack of talent 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 per elephant. The higher proportion of injuries caused by the bulls in the forest department could be attributed to a 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.

Conclusions and Recommendations

Unlike 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 a dwindling importance of captive elephants. Many private facilities are unable to pay proper salary (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 Expert Committee, 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 labour on 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 population. 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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SUMMARY

Mahouts are a specialized class of people with a proud professional background. However, the profession is losing its appeal owing to the dwindling importance of captive elephants. We have assessed their incomes, number elephants¹, background and human casualties by captive elephants through extensive surveys in three captive elephant management systems - private, Hindu temple and forest department prevalent in Tamil Nadu. The number of *mahouts* elephant¹ was significantly less than actually required in the temple system. The forest department with the highest salary retained a higher proportion of traditional *mahouts* (83%) followed by private system (>60%) and the temple system with the lowest salary and benefits had the lowest proportion (56%). The forest department system with a large segment of adult male elephants (68%) recorded larger numbers of human injury (0.02 incident elephant¹ year⁻¹), but cases of man-slaughter was negligible (0.002 human deaths¹ elephant¹ year). The temple management with predominantly (95%) female elephants still experienced the highest man-slaughter cases (0.01 human deaths elephant¹year⁻¹), which is attributed to a lack of traditional compassion and kindness, the essential traits to handle elephants effectively. Better economic and welfare measures are needed to retain the traditional talent in the profession and manage the captive elephants effectively.

Key words: *Mahout* status, Human - captive elephants conflict, Tamil Nadu.

तमिलनाडु, भारत की तीन प्रबन्ध प्रणालियों में महावतों की स्थिति और मानव बन्दी हाथी टकराव

वी. वनिता, के. त्यगिशन व एन. भास्करन्

सारांश

महावत विशेष वर्ग के लोग होते हैं जिनकी गर्वीली पेशेवराना पृष्ठभूमि रहती है। किन्तु, बन्दी हाथियों का महत्व कम होते चले जाने के कारण इस पेशे की मांग खत्म होती जा रही है। हमने उनकी आमदनी, प्रति व्यक्ति हाथियों की संख्या, पृष्ठभूमि और बन्दी रखे गए हाथियों द्वारा मानवों के मारे जाने का आंकलन बन्दी हाथियों के प्रबन्धन की तीन प्रणालियों – निजी, हिन्दू मंदिर, और वन विभाग, जो तमिलनाडु में प्रचलित हैं, विस्तृत सर्वेक्षणों द्वारा किया। मंदिर प्रणाली में हाथियों की संख्या की दृष्टि से महावतों की संख्या काफी कम थी जितनी वास्तव में उतने हाथियों के लिए महावतों की जरूरत होती है। वन विभाग में महावतों को वेतन सबसे अधिक मिलता है और पारम्परिक महावतों का अधिक समनुपात (83%) वहीं नियुक्त है जिसके उपरान्त निजी प्रणाली (>60%) और मन्दिर प्रणाली आती हैं जहां वेतन और अन्य लाभ कम है और उनका समनुपात (56%) भी कम है। वन विभाग प्रणाली में वयस्क नर हाथी सबसे अधिक मात्रा में (68%) हैं और वहीं प्रति हाथी प्रति वर्ष ज्यादा अधिक मानव क्षति (0.002) घटनाएं हुईं परन्तु मानवों के मरने के मामले नगण्य (0.002 मानव मृत्यु प्रति हाथी प्रति वर्ष) रहे। मन्दिर प्रबन्धन प्रणाली में हथिनियां बहुत ज्यादा (95%) हैं और उसे सर्वाधिक मानव-मरण (0.01 मानव मरण प्रति हाथी प्रति वर्ष) झेलना पड़ रहा है जिसका कारण पारम्परिक दयालुता और प्यार की कमी से जोड़ा जाता है जो हाथियों को संभालने के लिए अनिवार्य गुण होते हैं। इस पेशे में पारम्परिक योग्यता वाले व्यक्तियों को बनाए रखने तथा बन्दी बनाए हाथियों का प्रभावकारी प्रबन्ध करने के लिए ज्यादा अच्छे आर्थिक और कल्याणकारी उपायों को अपनाने की जरूरत है।

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