The domesticated Asian elephant in India

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Introduction

India harbours more than 50 percent of the wild elephant population and about 20 percent of the captive elephant population of Asia. The Asian elephant (Elephas maximus) enjoys a special status in the country and the elephant symbolises the Indian ethos. It has been very closely associated with the religion, myths, history and cultural heritage of India for centuries. Protecting and ensuring the survival of the elephant means much more to an Indian than protecting just another endangered species. Although the tiger has been designated as the national animal of India, for most Indians the elephant is the de facto national animal. It has been rightly said that one cannot imagine India without the elephant (Anon., 1993).

India has a fascinating history of domesticating wild elephants. Lahiri Choudhury (1988) has traced, on the basis of rock paintings, the history of domesticated elephants in India to about 6000 B.C. Seals of the Indus Valley civilization (2500–1500 B.C.) also suggest the presence of domesticated elephants in India at that time. Aryans, who are believed to have entered India about 1500 B.C., picked up the art of domesticating elephants in the process of assimilating the culture of the country they had adopted. Ancient literature, such as the Rig Veda (1500-1000 B.C.) and the Upanishads (900–500 B.C.), which is associated with the Aryans, contain many references to trained elephants. Vedic literature also confirms that by the sixth century B.C., the taming and catching of elephants had become quite a refined art.

The earlier literature reveals that kings and senior administrators were duly instructed about the art of handling elephants and about various aspects of the physiology and health of the elephant. Knowledge about elephants was considered as a part of ‘Arthasastra’, the science of statecraft. In the Kautilya’s Arthasastra (300 B.C. to 300 A.D.) there is a reference to the duty of the overseer of elephants to take care of the training of elephants. It prescribes the setting up of elephant sanctuaries on the periphery of the kingdom that were to be patrolled by guards. Anyone killing an elephant within the sanctuary was to be put to death. It also prohibits the capturing of elephant calves, tuskless bulls or those with small tusks, diseased elephants and cows with suckling calves. During the reign of Emperor Ashoka (273–232 B.C.) the elephant became the symbol of Buddhism. The Ashokan edicts refer to the setting up of hospitals for the treatment of elephants and other animals.

Various methods of capturing and training elephants were evolved over a period of time in different geographical regions of the country. The ‘Pit Method’ was popular in southern India until recently. The Khedda (i.e. Stockade Method), with many variations, has been prevalent in different parts of the country and has also been recorded by Megasthene, the Greek envoy to the court of the Emperor Chandra Gupta Maurya (third century B.C.). It was introduced to the Mysore Plateau in southern India by Sanderson in 1874. Mela Shikar (i.e. noosing from the back of a trained elephant) is popular in the northeastern part of the country. Sanskrit literature describes two more methods of capturing elephants: the use of female elephants as decoys and the use of nooses concealed on the ground. Indian experts have also gone to other Asian countries to teach the art of capturing and training elephants.

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Elephants were domesticated in the early days mostly for military purposes. The use of war elephants has been recorded in the military history of India, from the famous battle between Alexander the Great and King Porus, ruler of Punjab, on the banks of the Jhelum in 326 B.C. to the war of Shakkar khera in 1724 A.D. The British put elephants to use to mobilize their resources in northeastern India against the Japanese during the Second World War. In the modern era, however, elephants have been associated with state pomp, viewed as status symbols by princes and the landed gentry, used for the great Shikar (hunting) meets, for elephant-capturing, logging operations, tourism, temple processions, circus shows and, to a limited extent, for agricultural works.

An extensive body of literature has been produced in India on the management of domesticated elephants. The sage Palakapya (fifth or sixth century B.C.) is reputed to be the author of Hasti ayurveda, a treatise on the medical treatment of elephants and Matangila, which is a treatise on the physical and mental characteristics of elephants, their capture and care. Hastividyarnava, the famous Assamese treatise on the medical treatment of elephants was authored in the 18th Century by Sukumar Borkayat on instructions from the then Ahom queen. G.P. Sanderson’s Thirteen years among the wild beasts of India (1879), John Henry Steel’s A Manual of the Diseases of the Elephant and of his Management and Uses (1885), G.H. Evans’ Elephants and Their Diseases (1910), A.J.W. Milroy’s A short treatise on the management of elephants (1922), E.O. Shebbeare’s Soondar Mooni (1958) and P.D. Stracey’s Elephant Gold (1963) are some of the classics on domesticated elephants in recent times.

**Wild elephants**

One can very well imagine that in former times, when there were fewer people, forests were plentiful, and hunting for commercial purposes was negligible, Indian forests were teeming with elephants. The Moghul Emperor Jehangir (1605–27) was said to have had about 113 000 captive elephants in his empire (Lahiri Choudhury, 1988). The number of wild elephants during that period must have been many times greater than that. Since then, wild elephants have become extirpated from many states in central and northern India. Loss of habitat coupled with hunting and capturing have considerably reduced the elephant population in India in recent times. Elephants are now found in India in four non-adjoining geographical areas of the country: the northeast, the east, the northwest and the south, totalling about 86 000 sq km.

The first ever estimate of the elephant population can perhaps be credited to F.W. Champion who in 1938 reported a maximum number of 250 elephants in the State of Uttar Pradesh (Daniel, 1998). Formal surveys and census surveys of wild elephants on a national scale started towards the end of the 1970s. The Asian Elephant Specialist Group (AESG) of the IUCN Species Survival Commission provided the first estimate of wild elephants in India in 1980 as 14 800-16 455 (Daniel, 1980). The AESG provided the next estimate in 1985 as 16 590–21 361 (Anon., 1985). Sukumar reported the elephant population in India in 1989 as between 17 635 and 24 090 (Anon., 1993). Santiapillai and Jackson (1990) have cited 17 310–22 120 as the wild elephant population in India. Daniel (1998) has quoted the elephant population in 1993 as between 22 796 and 28 346.

Detailed censuses of wild elephants have been carried out in different states in India between 1997 and 2000. The latest available estimates indicate the following distribution of wild elephants: 9 401 in the northeast (Assam, Arunachal Pradesh, Meghalaya and Nagaland), 2 772 in the east (Bihar, Jharkhand and Orissa), 1 000–1 984 in the northwest (Uttar Pradesh and Uttranchal) and 14 853 in the south (Andhra Pradesh, Karnataka, Kerala and Tamilnadu). About 114-180 wild elephants also exist in the three northeastern States of Manipur, Tripura and Mizoram as well as on the Andaman & Nicobar Islands. Hence, the present population of wild elephants in India can be said to be in the range of 28 140–29 190 [Details given in Annex 1].
Apparently the wild elephant population in India has been showing an increasing trend. But the situation is not really promising. Significant decline in the habitat and population of elephants has been observed in the northeastern states. Even in the southern states of Kerala, Karnataka and Tamilnadu, where elephants have increased in number, poaching of tuskers for ivory has impaired the demographic structure of elephant populations. The proportion of mature bulls in these states has declined, considerably disturbing the sex ratio. In Bandipur Tiger Reserve (Karnataka) and Madumalai Sanctuary (Tamilnadu) the ratio of adult male to adult female has been reported to be between 1:12 to 1:15, whereas in Periyar Tiger Reserve (Kerala) this ratio has been stated to be around 1:100 (Menon et al., 1997). Such abnormal sex ratios do not bode well for the future growth of these populations. Elephants are also moving to new regions on account of disturbances in their original home ranges. In fact, the elephants found in Andhra Pradesh have been migrants from Tamilnadu since 1984.

Number of domesticated elephants

Past estimates of domesticated elephants are available mostly for war elephants. The army of Chandra Gupta Maurya (third century B.C.) had 9 000 elephants; other rulers in the Indian sub-continent at that time had at least another 5 000 elephants between them. The great Moghul Emperor Akbar (1556–1605 A.D.) had 32 000 elephants in his stables. His son Jehangir (1605–1627 A.D.), a great connoisseur of elephants, was stated to have 113 000 elephants in captivity: 12 000 in active army service, 1 000 to supply fodder to these animals, and another 100 000 elephants to carry courtiers, officials, attendants and baggage (Lahiri Choudhury, 1988).

Jardin put the number of elephants in captivity in 1836 at 40 000 (Anon, 1993). Some idea of the number of domesticated elephants can be had from the data on elephant captures. Sukumar (1994) estimates that during the period 1868 to 1980, 30 000–50 000 elephants might have been captured throughout the Indian subcontinent, largely in the northeast. As many as 5 564 elephants were captured in northeast India during 1961–79 (Lahiri Choudhury, 1984).

No formal census of captive elephants has ever been attempted in India. Although a livestock census has been conducted in various states in India in different years, either elephants were not covered or the information about them has not been analysed and tabulated properly. Some experts have, however, attempted to estimate the number of domesticated elephants in India. Jackson (1985) estimated the number as 2 910–3 110 including 750 for northern India, 700 for southern India and 1 460–1 660 for northeastern India. Santiapillai and Jackson (1990) cited a population figure of 2 260–2 760 including 500–750 for northern India, 300–350 for southern India and 1 460–1 660 for northeastern India. Lair (1997) suggests that these figures are under-estimates and the number of domesticated elephants in India should be not less than 4 000.

A quick but fairly exhaustive survey of the status of captive elephants was done by Project Elephant during November and December, 2000. The help of knowledgeable elephant owners, NGOs, the Central Zoo Authority, the Circus Federation of India, State Forest Departments and other experts was sought for this purpose. Field visits were made to some major elephant centres in the northeast. This survey yielded a minimum figure of 3 400 captive elephants in India. However, information about circuses as well as mendicants in northern India does not appear to be complete. A few elephants in the south and northeast also appear to have been missed. Hence, the present number of captive elephants in India can be put at 3 400–3 600 including 271-300 for northern India, 209–240 for eastern India, 79–92 for western India, 860–920 for southern India, 1 903–1 970 for northeastern India and 78 for the Andaman and Nicobar Islands. A breakdown by states is given in Annex 2. This estimate compares fairly well with the earlier estimates. The apparent increase in the northeastern region is because of improved record-keeping and intensive survey. The decrease in the northern and eastern regions is a result of the transfer of elephants to the south where the demand for elephants is still high.
Laws

The first codification of laws relating to elephants in India is found in the famous treatise on statecraft *Arthasastra* by Kautilya, Prime Minister of Emperor Chandragupta Maurya (third century B.C.). It stipulated the setting up of elephant sanctuaries on the periphery of the kingdoms and prescribed the death penalty for anyone killing an elephant within the sanctuary. The era of modern legislation was introduced in India by the East India Company in the 18th century. Some of the earlier pieces of legislation concerning elephants include: the Government Forest Act, 1865 (Act VII of 1865), the Bengal Act 2 of 1866, the Bengal Act 4 of 1866, the Bengal Regulation 5 of 1873, the Madras Wild Elephant Preservation Act, 1873 (The Madras Act No.1 of 1872), the Indian Forest Act, 1878 (Act VII of 1878), the Elephant Preservation Act, 1879 (Act VI of 1879), the Bengal Act 5 of 1898, the Mysore Games and Fish Preservation Regulations, 1901, the Wild Birds and Animals Protection Act, 1912 (Act VIII of 1912) and the Indian Forest Act, 1927 (Act XIV of 1927). The Acts of 1879, 1912 and 1927 remained the major laws for protecting elephants in most parts of the country until 1972 (Bist & Barua, 2000).

The Wildlife (Protection) Act, 1972 (No. 53 of 1972) [WPA-1972] is at present the principal legal instrument for the protection of wild animals in India. It is applicable all over India except in the State of Jammu and Kashmir that has a separate but similar Act. In view of Section 66 (Repeal and Savings), this Act has an overriding effect over all other laws concerning wild fauna in India. This Act has also led to the formation of separate Wildlife Wings headed by a Chief Wildlife Warden (CWLW) in the states and by a Director of Wildlife Preservation at the Centre to carry out the provisions of the Act.

It is interesting to note that in the original WPA-1972, the Indian (Asian) elephant was included in Schedule-II (Part I) of the Act thereby granting it the status of “Special Game” that could be killed or captured on the basis of a licence (Section 9) and commercially traded under a licence (Section 44). The domesticated elephant was included in the definition of Cattle [Section 2(6)]. Ivory was kept outside the purview of the Act. The WPA-1972 and its schedules were amended substantially in 1977, 1980, 1982, 1986 and 1991 and the amendments have special implications for the elephant. Most of these changes were influenced by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that has the Asian elephant in Appendix I. India became a party to CITES on July 20, 1976 when it became obligatory to change the domesticated legislation and the country’s import/export policy to bring its provisions into conformity with those of the CITES. The Indian elephant was transferred to Schedule-I (i.e. the most protected species) on October 5 1977. The export of the Indian elephant and its ivory from India was banned in 1978. Domestic trade in the ivory of the Indian elephant was banned in November 1986. The Act recognizes a domesticated elephant both as a ‘captive animal’ [Section 2(5)] and a ‘wild animal’ [Section 2(36)]. The term ‘vehicle’ as defined in the Act also includes the elephant [Section 2(33)].

A summary of the provisions of the Act having a bearing on the Asian elephant is given below (Bist and Barua, 2000):

1. Sections 9, 11 and 12: Hunting (which, by virtue of Section 2, also includes capturing) of elephants is normally prohibited. An elephant can be hunted under the orders of the CWLW if it has become a danger to human life or has become diseased or disabled beyond recovery. No elephant can, however, be hunted under this provision of the Act even if it becomes a threat to standing crops or property. The Act also permits killing or wounding in good faith of any elephant in defence of oneself or any other person. The CWLW is also authorized to issue a permit for hunting an elephant, with the previous permission of the Central Government, for the purpose of education, scientific research, scientific management or collection of specimens for zoos recognized by the Central Zoo Authority (CZA), public museums and similar institutions. Scientific management of elephants, as defined in the Act, means translocation of elephants to an alternative suitable habitat, or their population management without killing, poisoning or destroying them.
2. Sections 18-38: The Act makes special provisions for establishing new Protected Areas (i.e. Sanctuaries and National Parks) for the protection of all wild fauna and flora found therein and also for regularisation of the Protected Areas set up earlier [Section 66(3)]. The Act prohibits the exploitation of all wildlife and also the destruction of habitat of any wild animal within a Sanctuary or a National Park except for the purpose of improvement and better management of the wildlife living therein. Prior approval of the State Government is also needed for this purpose. The Act imposes suitable restrictions on trespass, and use of fire, injurious chemicals, poisons and weapons within a Sanctuary and a National Park. The Act bans grazing within a National Park while prior approval of the CWLW is needed for grazing within a Sanctuary. The Act enjoins on the CWLW to arrange for prophylactic inoculation of all livestock living within 5 km of a Sanctuary or a National Park against communicable diseases. All persons possessing firearms and living within 10 km of a Sanctuary or a National Park are required to register with the CWLW or the Authorized Officer (AO). Boundaries of Sanctuaries and National Parks cannot be altered without approval of the State Assembly.

3. Section 39: Any elephant captured or killed without approval of the competent authority or killed by mistake or found dead, or any trophy (cured or uncured), animal article or ivory (including imported ivory) obtained from an elephant involved in any offence under the Act is deemed to be government property. Any person who comes in possession of such government property is under legal obligation to inform the nearest police station or the AO within 48 hours.

4. Sections 38I and 38J: No zoo can acquire or transfer an elephant except with the previous permission of the CZA. Teasing and molesting captive elephants in a zoo is an offence. Recognition of Zoo Rules, 1992 framed by the Government of India under Section 63 prescribes standards and norms for keeping captive elephants and other animals subject to which the CZA may recognize or refuse to recognize a zoo.

5. Sections 40 (2) and 42: No person, without written permission of the CWLW or the AO, can keep an elephant in his control, custody or possession. The CWLW may issue an ownership certificate for this purpose.

6. Sections 40 (2) and 49: No person, without previous permission in writing from the CWLW or the AO, can acquire or receive an elephant. No person, other than a zoo recognized by the CZA, can purchase, receive or acquire an elephant otherwise than from a person authorized under the Act.


8. Sections 43 and 49C (7): No person, who lacks a certificate of ownership, can sell or offer for sale or transfer whether by way of sale, gift or otherwise, an elephant without written permission of the CWLW or the AO. The said authorities, before granting permission, shall satisfy themselves that the elephant has been lawfully acquired and issue an ownership certificate to the applicant. Transactions between zoos recognized by the CZA are exempted from the aforesaid restrictions.

9. Section 43 (3): No person, who lacks a certificate of ownership, can transfer or transport an elephant from one state to another state without prior permission in writing from the CWLW or the AO of the destination state.

10. Section 43 (2): A person having an ownership certificate in respect of an elephant is required to inform (within 30 days) the CWLW or the AO of the destination state when he transfers or transports an elephant from one state to another.

11. Section 48A: No person can accept an elephant for transportation except after exercising due care to ascertain that permission from the CWLW or the AO has been obtained for such transportation.

12. Section 50: Any forest officer or any police officer of the rank of sub-inspector or above, or any wildlife official authorized by the State Government or the Central Government can, on the basis of reasonable suspicion, require any person to produce for inspection any captive elephant or animal article (including ivory articles) or trophy (cured or uncured) obtained from an elephant in
his control; or ownership certificate, licence or permit required to be kept by him under the Act. They can search any baggage, vehicle, vessel, premises or land for the aforementioned items and seize the same in case of violation of any provision of the Act. They can also seize any trap, tool, vehicle (including an elephant), vessel or weapon used for committing the offence. The offender may also be arrested without warrant.

13. Section 51: For any offence relating to elephants, the offender can be punished with imprisonment for a term not less than one year but extending up to six years and also with a minimum fine of five thousand rupees. The term of imprisonment can be extended up to seven years in case of offences committed by professional dealers, manufacturers and taxidermists dealing in elephants or articles made of ivory (including imported ivory) or any other product derived from elephants.

As stated earlier, many Forest Acts also contain provisions for the protection of elephants in the Reserved and Protected Forests. The Indian Forest Act, 1927 (IFA-1927) regards elephants as ‘forest produce’ and therefore requires a transit permit for their movement from one place to another (Section 41). Similar provisions exist for elephants in the Forest Acts in the states where the IFA-1927 is not applicable.

Domesticated elephants in India are also subject to the provisions of the Prevention of Cruelty to Animals Act, 1960 (59 of 1960) [PCA-1960]. This Act does not define ‘cruelty’. However, Section 11(1) enumerates various acts of omission and commission, which constitute cruelty to animals. Barua and Bist (1996) have listed various possible forms of cruelty to elephants that include: (a) Beating, over-riding, over-loading, torturing or otherwise subjecting any elephant to unnecessary pain or suffering; (b) wilfully and unreasonably administering any injurious substance to an elephant; (c) confining an elephant in a cage that does not permit the animal a reasonable opportunity for movement; (d) conveying or carrying an elephant in such a manner as to subject it to unnecessary suffering; (e) mutilating or killing any elephant by injecting strychnine into the heart or using any other unnecessarily cruel method; (f) not providing any elephant with sufficient food, water or shelter; and (g) inciting any elephant to fight any other animal for the purpose of entertainment. Some of the rules framed under the PCA-1960 seek to regulate such activities as may constitute cruelty to all animals including elephants. The Prevention of Cruelty to Draught and Pack Animals Rules, 1965 prohibits the use of elephants for drawing any vehicle or carrying any load for more than nine hours a day. It also prohibits the use of any spiked stick or sharp equipment for driving or riding an elephant. The Performing Animals Rules, 1973 lays down necessary procedures for registration of trainers and exhibitors of performing elephants. The Prevention of Cruelty (Capture of Animals) Rules, 1972 prohibits the capture of animals except by the ‘sack and loop’ method, tranquilliser guns or any other method that renders the animal insensible to pain before capture.

Different sets of legal provisions exist in India to regulate the import and export of elephants and products derived from them. The Government of India announces its import/export policy from time to time and with regard to a particular species of wildlife and this is usually influenced by its status under the WPA-1972 and the CITES. According to the existing policy (1 April, 1997 to 31 March, 2002), zoological parks, recognized scientific institutions, circus companies and private individuals can import elephants on the recommendation of the CWLW subject to the provisions of the CITES. Zoological parks, in particular, are exempted from import duty under the provisions of the Customs Tariff Act, 1975. The export of elephants, including their parts and products, is prohibited. However, in exceptional circumstances, the non-commercial export of elephants is permissible for specific scientific, zoological or educational purposes on the recommendations of the Ministry of Environment & Forests, Government of India. All exports and imports of elephants are permissible only through the custom points at Delhi, Calcutta, Mumbai and Chennai and are subject to provisions of the CITES and inspection by the wildlife authorities of the central government. Any violation of the import/export policy is deemed to be an offence punishable under the Customs Act, 1962.
The Indian elephant now enjoys much more legal protection than ever before. But the enforcement of the laws leaves much to be desired. Even after 22 years of inclusion of the Indian elephant in Schedule-I of the WPA-1972, a large number of captive elephants is still not covered by ownership certificates. The sale and purchase of elephants at the Sonepur fair (Bihar) takes place every year without much regard to the provisions of the Act. Reports regarding the illegal capture of wild elephants are frequently received from the northeastern states. The poaching of elephants for ivory has been going on unabated in different parts of the country and notorious poachers are still at large. Grazing continues to be a serious problem in the Protected Areas and reports of elephants dying of anthrax and other cattle-borne diseases are not uncommon. Therefore, steps to improve the efficiency of the enforcement agencies (Bist & Barua, 2000) must urgently be implemented. Major flaws in the existing laws are as follows:

1. Some of the safeguards for the Schedule-I animals as envisaged in the WPA-1972 do not suit the nature of elephants and the management practices relevant to them. For example, of all the wild animals, elephants cause the greatest damage to crops and houses. Yet, even the known crop-raiders and house-breakers among the elephants cannot be captured unless they turn into human killers (Section 11). This causes resentment among the public and they, sometimes, take the law into their own hands by injuring or killing the elephants in question. Such a situation hardly helps the cause of elephant conservation. Similarly, although a large number of abandoned elephant calves are routinely rescued by the forest staff and made captive, this operation does not have the backing of the Act.

2. Although periodic capturing of elephants has been recognized as a management option for containing depredation and population control, this option is seldom exercised because of the very limited scope to dispose of elephants under the WPA-1972 and the export policy. The WPA-1972 is laden with too many restrictions to encourage elephant keeping in India. There is no evidence that trade in live elephants is in any way responsible for endangering Asian elephants, yet being in Schedule-I of the WPA-1972 and Appendix I of the CITES, they are precluded from trade.

3. The domesticated elephant was excluded from the definition of livestock through an amendment in the WPA-1972 in 1991. This has theoretically placed it outside the purview of the Livestock Department. Moreover, domesticated elephants are precluded from the legal requirement of the prophylactic inoculation of livestock around Protected Areas.

4. As the elephant is included in Schedule-I, offences associated with this animal attract maximum punishment under the WPA-1972. A person can get the same punishment for possessing an elephant without permission of the CWLW as for poaching a tusker. Even minor offences relating to elephants are not compoundable. Thus, for a large number of persons who have unwittingly violated some provision of the Act concerning captive elephants, there is no other option but to keep quiet about the violation and perhaps continue with it.

5. Domesticated elephants are used for different types of work in India. Many of these elephants are subjected to a variety of acts of cruelty (Barua & Bist, 1996). The WPA-1972 or the rules framed under it do not provide for the care and maintenance of captive elephants other than those in the custody of the zoos recognized by the CZA. The provisions of the PCA-1960 are generally not appropriate for elephants. It is necessary to frame exclusive standards and norms for elephant owners and enforce the same through the WPA-1972 (Bist, 1996).

Registration

Prior to enactment of the WPA-1972, there was no legal provision for registration of domesticated elephants. Some timber companies used to brand their elephants for identification, but it was their internal affair. In northeastern India, the British started a system (still in practice) of registration of khoonkies (trained elephants) engaged by the contractors for elephant capturing operations. This was meant to check the entry of unscrupulous elephant catchers inside the operational area. The
registration comprises a certificate issued by the local Divisional Forest Officer containing details of height and other identifying marks of the elephant. In recent years, photographs of the mahout and phandi (nooser) have also been affixed on the registration papers. The registration remains valid for the period of validity of the contract and is enforceable through the clauses of the contract. In northeastern India annual grazing permits for elephants issued by the Forest Department to the owners are also sometimes regarded as an ‘identity card’ for the elephant.

The WPA-1972 envisages the registration of domesticated elephants by way of ownership certificates. These certificates are issued by the CWLW or the AO to the legitimate owner of the elephant after due verification. The forms for ownership certificates have been prescribed by various state governments under the Wildlife (Protection) Rules framed under Section 64 (A sample is given in Annex 3). The Act provides for the issuance of ownership certificates in the following cases (Anon, 1994):

Case A: The Act stipulates that the owners of all captive animals covered under Schedules I and II (Part II) should declare the same to the CWLW or AO within 30 days from the commencement of the Act [Section 40(1)]. The Act expected the CWLW or the AO to conduct an inquiry on receipt of such declaration and affix identification marks to the animals in question (Section 41). Section 42 enabled the CWLW to issue ownership certificates for the purpose of Section 40. Most of the applications for ownership certificates for elephants are rejected on the ground that no declaration was made within the stipulated period. But the fact remains that elephants were not in Schedule I or in Schedule II (Part II) at the time of the commencement of the WPA-1972. It was included in Schedule I on 5 October 1977 and the Act contains no clear instructions as to how to deal with such late entrants. Section 40 (4) empowers the state government to require any person to declare certain items within a stipulated period. But this section does not cover captive animals. Despite this legal lacuna, some state governments have issued notifications asking owners to declare their elephants within a specified period. But not much can be achieved because of the following reasons:

1) In a vast country like India, elephants and their owners are scattered in remote locations and it is not always possible for them to have knowledge of government notifications. In northeastern India, the Forest Department has no presence in many areas where elephants are located.

2) In some states (e.g. Assam and Nagaland) Wildlife (Protection) Rules were not framed until recently and forms for submitting declarations and issuing ownership certificates were not prescribed.

3) Section 42 empowers only the CWLW to issue ownership certificates and the power has not been delegated to the local Forest Officers. Owners generally avoid going to the state capitals to meet the CWLW for fear of harassment.

4) The fact that the Forest Department cannot take any action against the defaulters has only made elephant owners grow indifferent. Conversely, most of the circus companies, vulnerable to harassment by the forest authorities, do apply for ownership certificates.

5) Section 42 stipulates that the CWLW ‘may issue’ a certificate of ownership. It suggests that the issuance of ownership certificates is subject to the discretion of the CWLW. Most of the CWLWs do not take their responsibility with regard to Section 42 with the same seriousness as other provisions of the Act.

6) Many applications have been received by the CWLWs after the date stipulated by the state government. But, the CWLWs have been under the impression that this delay constitutes an offence under the Act. There is no provision in the Act to condone such delays. Ironically, even a nominal offence in respect of captive elephants cannot be compounded under the Act (Section 54, proviso) and invites severe penalty involving imprisonment of the owner and forfeiture of the elephant.
Case B: Pursuant to the prohibition on commercial trade in scheduled animals [i.e. animals covered in Schedule I and Schedule II (Part II)] in 1986, ex-licensed dealers in captive elephants were required to declare their stocks to the CWLW or AO on or before 25 January 1987. The CWLW or the AO were expected to conduct an inquiry and affix identification marks. Thereafter, the CWLW, with the prior approval of the Director, Wildlife Preservation, Government of India, could issue ownership certificates to the ex-dealers for elephants that they wished to retain for their bona fide personal use. This provision of the Act has not been utilized, as there were no licensed dealers in captive elephants prior to 1987. Persons dealing without a licence in captive elephants before 1987 continue to do so with impunity.

Case C: Immediately after inclusion in Schedule I, elephants have become subject to Section 40(2) that prohibits a person from possessing, acquiring, disposing of and transporting a captive elephant without written permission of the CWLW or the AO. No time limit has been given to the owners for applying for permission. The Act does not state clearly that the ‘written permission’ will be in the form of an ownership certificate. However, the CWLW has been empowered under Section 42 to issue ownership certificates for the purpose of applications under Section 40 (2). But neither the CWLWs nor the owners have made use of this provision of the law.

Case D: An owner of a captive elephant not having an ownership certificate is required to obtain prior permission of the CWLW or the AO in writing before disposing of or transporting his elephant. The Act prescribes that before granting such permission, the CWLW or the AO should satisfy himself that the elephant has been lawfully acquired. Section 43(5) stipulates that the CWLW or the AO shall issue a certificate of ownership after such inquiry as he may deem fit and may affix an identification mark on the elephant. This provision is superior to that of Section 42 because:

1) It suits the owners who may approach the AO (usually a local Forest Officer) instead of the CWLW for an ownership certificate;

2) Issuance of an ownership certificate is not discretionary for the CWLW or the AO;

3) The CWLW and the AO have been given discretionary powers in respect of inquiry for the purpose of ownership certificates. Hence, they need not enter into complicated inquiries.

Case D provides a very convenient way of granting ownership certificates and most of the certificates at the famous elephant fair at Sonepur are issued in this way.

In conclusion, it may be said that the provisions relating to ownership certificates are the most confusing and the least understood parts of the WPA-1972. This has resulted in a strange situation where a large number of domesticated elephants have neither been provided with ownership certificates nor confiscated by the Forest Department for violation of the law. Available information indicates that there are only about 1 300-1 400 domesticated elephants with ownership certificates in India and that accounts for about 48 percent of the eligible elephants. In Tamilnadu and Delhi, the percentage of privately owned elephants having ownership certificates is above 80 percent. Assam is reported to have issued as many as 703 (63 percent) ownership certificates but it is doubtful that all these certificates are in conformity with the provisions of the WPA-1972. Circus elephants are mostly covered under ownership certificates. There are many instances when Forest Officers, who feel more comfortable with the Forest Acts than with the WPA-1972, have issued transit permits in lieu of ownership certificates for elephants sold by them to persons, circuses or temples.

A few more points regarding registration of elephants merit attention. The form for the ownership certificate has not been designed with the elephant in mind. Hence, it may not be possible to identify the elephant on the basis of the scanty information given in the ownership certificate. The Act does not provide for periodic renewal of ownership certificates to ensure recording of the current measurements and features of the elephant. Moreover, provisions of the Act relating to affixing identification marks
on the elephant have not been followed. In fact, not much thought has been given to developing a convenient, cost effective and socially acceptable method of marking elephants.

Organizations and their major projects

State Forest Departments (SFDs) have a double role to play as regards domesticated elephants: employer and regulator. All states having wild elephants, except Mizoram and Manipur, employ captive elephants. In states like Orissa and Madhya Pradesh, almost all the domesticated elephants belong to the SFD. In some states, SFDs also own some of the zoological parks having elephants. By and large, the SFD elephants are properly looked after. There are rules and orders for maintenance and care of these elephants. Wildlife Wings of the SFDs headed by the CWLWs are responsible for enforcing the provisions of the WPA-1972 relating to domesticated elephants. Bihar Forest Department plays an important role in organising the annual elephant fair at Sonepur. The SFD in Karnataka also helps in organising an elephant procession during the world famous Dusshera fair at Mysore. Forest staff are frequently called upon to control tuskers owned by circus or private individuals when they go berserk or come in musth. After the ban on the commercial capture and trade in elephants, the occasional capture of wild elephants by the SFDs is the only source of new domesticated elephants in India.

There are three authorities in the Ministry of Environment and Forests, Government of India, which deal with domesticated elephants. The Director of Wildlife Preservation is the highest legal authority for discharging the responsibilities of the central government under the WPA-1972. He is also the Management Authority for CITES in India. He plays a direct role in regulating the import and export of domesticated elephants and grants permission for capturing elephants under Section 12 of the WPA-1972. The Central Zoological Authority (CZA) oversees the implementation of standards and norms relating to the zoo elephants under the provisions of the Recognition of Zoo Rules, 1992 and also regulates the transfer of elephants between the recognized zoos. Project Elephant, the third agency, was established in February 1992 to undertake conservation activities for the long-term survival of elephants in India. One of the objectives of Project Elephant is ‘to improve the welfare of elephants in domestic use, including veterinary care, training of mahouts, humane treatment of elephants, etc’. But Project Elephant has mostly been busy in projects relating to wild elephants and it has not done much for domesticated elephants. Presently, it is in the process of gathering information about the status of domesticated elephants and their keepers. It also plans to organize a series of training programmes for mahouts, forest officers and veterinary doctors. It plans to utilize the services of NGOs and associations of elephant owners to facilitate registration of domesticated elephants.

The Ministry of Social Justice, Government of India and the Animal Welfare Board of India have undertaken many initiatives to promote the welfare of domesticated animals and to prevent cruelty to animals. The major focus of their activities is the circus animals. Various branches of the Society for Prevention of Cruelty to Animals (SPCAs) in Kerala have been particularly active in preventing cruelty to temple elephants.

The Indian Veterinary Research Institute (IVRI), Izzatnagar conducts a diploma course in wildlife health management for serving veterinary doctors. The Wildlife Institute of India (WII), Dehradun conducts training courses in wildlife management for forest officers. The WII has also been running a collaborative programme with the U.S. Fish & Wildlife Service since 1995 known as the Indian Wildlife Health Co-operative (IWHC). The IWHC consists of five veterinary colleges, one each in the east, west, north, south and central regions. Each college deals with wildlife health issues and training within its region. Two of these colleges, the College of Veterinary Science, Kanhapara, Guwahati (Assam) and Madras Veterinary College, Chennai (Tamilnadu) are located in the major elephant regions in India, though they do not have any special programme relating to elephants at present. Kerala Agricultural University, Trichur, organizes workshops and training programmes related to the management of captive elephants for veterinarians, elephant keepers and other interested persons.
The Elephant Welfare Organization is a prime NGO in Kerala dedicated to the cause of captive elephants. It has organized some training courses for the mahouts and plans to set up an exclusive hospital to provide veterinary services for domesticated elephants. The Zoo Outreach Organization in Coimbatore has been providing a valuable service by disseminating information relating to the management and veterinary care of captive elephants through its journal *Zoos’ Print*. There are associations of mahouts and *phandis* (noosers) in Assam, but these are not very active at present. TRAFFIC–India, a programme division of the WWF–India, has initiated a study of the trade in captive elephants. But the fact remains that there are not enough NGOs working for the welfare of domesticated elephants.

There are no foreign funded projects relating to domesticated elephants in India.

**Work done by elephants**

The survey conducted by Project Elephant in November and December 2000 gave the following breakdown of captive elephants in terms of ownership:

- Forest Departments = 482
- Zoos = 80
- Circuses = 106
- Temples = 192
- Private Individuals = 2,540

Elephants owned by State Forest Departments (SFDs) are used for patrols by field staff in National Parks and Sanctuaries. They are also used for carrying tourists inside forests for viewing wildlife. During floods and other natural calamities, SFD elephants are sometimes requisitioned by the civil authorities for arranging relief works. In the Andamans and Nicobar Islands, Maharashtra, Kerala and Tamilnadu, SFD elephants are occasionally used for logging operations. Karnataka Forest Department provides elephants for the *Dusshera* festival in Mysore. West Bengal Forest Department uses its elephants for driving away herds of wild elephants from croplands. SFD elephants in Karnataka and Tamilnadu are also often utilized for capturing and training wild elephants. The use of domesticated elephants in many states is disproportionate to the populations of wild elephants in the states. For example, SFDs in Orissa, Bihar (including Jharkhand) and Meghalaya possess only two captive elephants each despite wild elephant populations of 1,827, 618 and 1,840, respectively. Even in Kerala, which has 5,737 wild elephants, the SFD has only 16 elephants. Manipur and Mizoram, the two northeastern states, do not have any SFD elephants at all. West Bengal Forest Department, on the other hand, makes intensive use of domesticated elephants: it has one captive elephant for every six wild elephants. There is obviously great scope for increasing the utilization of elephants by the SFDs, both in the elephant bearing states and elsewhere.

The zoo elephants are used only as exhibits. Their use for joy rides was discontinued because of criticism by animal welfare activists. There are only 27 zoos in India keeping elephants. Some of the zoos are used as rescue centres for elephants confiscated from individuals for violation of laws, or for the abandoned calves of wild elephants. The Government of India does not encourage the establishment of more zoos without adequate infrastructure. There is, therefore, not much scope to increase the number of zoo elephants.

The circus elephants are used to entertain the public. But they do not appear to have a promising future. Circus companies in India are constantly struggling for their economic survival and they have to face tremendous criticism from animal welfare activists for subjecting their animals, including elephants, to unnecessary pain and cruelty. But currently, circuses in India are one of the biggest buyers of elephants and they are continuously on the look out for replacements for their old elephants.
Temple elephants, with the exception of one in Punjab, are all in southern India. Although they are used for religious processions, most of the year they remain idle. Most of the temples possess sufficient financial resources to care for their elephants, yet many of them are often criticized for exposing their elephants to stress during processions and for not paying adequate attention to their health and hygiene. There is no indication that the demand for elephants in temples will decrease in the near future.

About 75 percent of captive elephants are owned by private individuals. Just three states, viz. Assam with 1,120, Kerala with 586 and Arunachal Pradesh with 550, account for 89 percent of the elephants privately owned. Domesticated cow elephants in northeast India get better opportunities to mate with wild bulls than their counterparts elsewhere. Almost all elephants in the northeast are used for logging operations in private or community forests or for other works in saw mills. The Assam elephants are also used to assist in the capture and training of wild elephants whenever the opportunity arises. With a prohibition on logging imposed by the Supreme Court of India in 1994, job opportunities for the northeastern elephants have decreased and many elephants have since been sold to buyers from Kerala, Bihar and Tamilnadu. But most of the elephants are still being employed in illegal logging operations in the northeast (Barua, personal communication.). The Kerala and Tamilnadu elephants are hired out to temples for religious ceremonies. Some of them are sometimes hired by the coffee planters in Kerala and Karnataka for logging operations. Private elephants in Jaipur (Rajasthan) are used for tourism purposes and they are reported to be very popular with the foreign tourists. In Delhi private elephants are in great demand for marriage processions, social functions and occasionally in political rallies. In Bihar, Jharkhand and eastern parts of Uttar Pradesh many big landlords still keep elephants as a status symbol. Some of these elephants are also used for transporting people and material in remote areas. Many elephants in Uttar Pradesh and Punjab are either owned or hired by mendicants who roam around different parts of the country during the harvesting or festival seasons and make a handsome living through begging.

One may expect a substantial reduction in the number of privately owned elephants in the northeast unless logging operations are legally resumed. A similar reduction may be expected in Uttar Pradesh and Bihar if the landlords no longer find it viable to maintain elephants without sufficient economic returns. But elsewhere in India private ownership of elephants appears to have stabilised. There is fair scope for hoteliers and tourist organizations to utilize domesticated elephants in well-known tourist locations in southern and western India as is the case in Rajasthan.

Veterinary care

Not all domesticated elephants in India get veterinary care. The zoo elephants and SFD elephants fare the best. All major zoos in India have at least one full-time veterinarian. Major National Parks and Sanctuaries in India also have full-time veterinary doctors. But most of these veterinary doctors are officers of the Veterinary (Livestock) Departments sent on deputation to the Forest Departments or the zoos for a fixed period. They join as novices, gain experience and return to their parent department before contributing anything meaningful. But some of the zoo doctors with long experience with captive elephants have contributed a lot to veterinary science and have published papers and articles relevant to elephants. Forest authorities in most of the National Parks and Sanctuaries receive help from the Veterinary Departments in arranging the immunisation of livestock in the fringe areas – a legal requirement under the WPA-1972. In many other Protected Areas, NGOs also arrange veterinary support for the immunisation of livestock.

In most of the districts having captive elephants, local veterinary doctors are called upon to treat sick elephants. They are also summoned to help the owners to control bad tempered elephants, particularly loose tuskers in musth. Needless to say, most of the veterinary doctors are not well prepared to deal with these cases. However, in States like Assam and Kerala, which have substantial populations of captive elephants, there are some private veterinary practitioners with sufficient
experience of dealing with elephants. Care of domesticated elephants is not covered in the syllabi of most of the veterinary colleges and only a few colleges send their students for internships in a zoo or a Protected Area having captive elephants. Two notable exceptions are Kerala Agriculture University, Trichur and the College of Veterinary Sciences, Khanapara (Guwahati) that have research and teaching programmes relevant to captive elephants. Kerala Agricultural University also organizes workshops and refresher courses on captive elephant management for veterinary doctors. Tranquillising equipment and good laboratories are not available in most district towns having elephants. This often creates complications. There have been cases in West Bengal when the local veterinary doctors identified anthrax as the cause of death of some elephants, but detailed laboratory tests showed that this was not so. There also have been cases in India when as a result of the absence of tranquilizing guns some problematic tuskers have had to be shot dead rather than simply tranquillized. In remote villages in Bihar, Uttar Pradesh and the northeastern States, veterinary help is rare and elephant keepers depend on kaviraj (practitioners of traditional medicine), ‘quacks’ or their own knowledge. In Kerala, some kaviraj are in great demand by elephant owners. Some practitioners also use homeopathic medicines to treat sick elephants. However, the present generation of elephant owners and mahouts in India generally shows a preference for modern rather than traditional veterinary treatment.

Summary

Despite a long and glorious tradition of domesticated elephants, there have been no systematic and conscious efforts in India to sustain this tradition. Domesticated elephants have been ignored both by the wildlife experts and the livestock experts. Most of the legal restrictions on private ownership of elephants were not intended, but are consequential to the inclusion of the Asiatic elephant in Schedule-I of the WPA-1972. Provisions of the WPA-1972, PCA-1960 and various rules made under the said Acts were never framed with the elephant in mind and, as such, they suffer from various inadequacies and flaws. Some restrictions like the requirement of ownership certificates for elephants could be utilized to improve the condition of domesticated elephants if the Forest Departments could enforce these provisions effectively.

There is also an apprehension that much of the traditional knowledge and skill available in India will be lost unless the demand for and the utilization of domesticated elephants are kept alive. It is important to understand that the management of domesticated elephants is complementary to that of wild elephants. It will be ironical if the option of capturing and utilising surplus or problematic wild elephants is given up simply because of some illogical provisions of the law. It makes better sense to take steps to stop the abuse of domesticated elephants rather than ban domestication. An elephant owner should be presumed a potential conservationist unless proved otherwise. It is desirable that the energy, experience and goodwill of thousands of elephant keepers in India is channelled into efforts designed to promote the conservation and welfare of elephants.

It is possible to utilize modern techniques and scientific knowledge to prevent unnecessary cruelty associated with the capture, training and handling of elephants. Demand for domesticated elephants will have to be created and sustained by careful planning. It is also possible to give suitable training to elephants to prepare them for new jobs and new avenues of employment. At the same time, there is an acute need for a large work force of trained mahouts and veterinarians to take proper care of the large fleet of captive elephants that currently exists.

Recommendations

1. Planners and policy makers in India should acknowledge that capturing and domesticating wild elephants is an integral part of their conservation and management.

2. A formal census of domesticated elephants should be carried out in India urgently.
3. A general amnesty should be given to all elephant owners who have failed to apply for ownership certificates. They should be given at least six months to obtain ownership certificates. The legal authority of issuing ownership certificates should be delegated to the district level forest officers. NGOs, Livestock Department and elephant owners should be involved in the exercise. Publicity and confidence building measures should precede the drive for registration.

4. Elephant owners should be encouraged to form associations, which can be involved in registration and other welfare programmes for elephants and mahouts. Elephants having ownership certificates should be provided with free periodic vaccination. The Government of India may also initiate an insurance programme for registered elephants and their mahouts.

5. The capture of wild elephants should be done only through the SFD agencies, but ownership of and the domestic trade in domesticated elephants should be liberalized. Necessary amendments in the WPA-1972 should be introduced for this purpose.

6. Ownership certificates should be suitably designed to include all relevant information about the elephant. Affixation of an identification mark on the elephant should be made legally binding and a uniform system of marking should be adopted all over India.

7. Necessary norms and standards should be prescribed for elephant owners and enforced through the WPA-1972.

8. A review of the PCA-1960 and various rules framed thereunder should be undertaken to make them relevant to captive elephants. If necessary, a separate set of rules applicable to domesticated elephants should be promulgated under the PCA-1960.

9. A training programme for veterinarians posted in districts having wild and captive elephants should be launched. This should focus on the health management of elephants and on allied topics. Properly equipped laboratories should be set up in all such districts to assist the elephant vets. In each geographical region of India, at least one veterinary college should be identified and developed as a centre of excellence for research and training in elephant health care.

10. Suitable research should be undertaken for evolving efficient and painless methods of training and handling elephants in captivity.

11. Suitable training programmes should also be undertaken for mahouts, elephant owners and managers to increase their professional skills and to sensitize them to the requirements of humane and scientific methods of handling elephants. Possibilities for setting up a training institute for elephants, mahouts and trappers, one each in the northeast and the south, should be explored.

12. Forest Departments in the elephant bearing states and elsewhere should be encouraged to increase the use of elephants in work related to forestry and wildlife. Tourism corporations should also be encouraged to utilize domesticated elephants wherever possible. The Government of India could undertake a scheme for supplying trained elephants for use in the National Parks and Sanctuaries in the non-elephant bearing states.

13. The traditional elephant fair at Sonepur (Bihar) should be patronized by Project Elephant and utilized as a forum for promoting ideas and values about the conservation and welfare of elephants. Similar elephant fairs may be organized in other regions in India.

14. Realizing that the international trade in live specimens of the Asian elephant is not detrimental to the survival of the species (unlike the trade in ivory), the possibility of relaxing some provisions of CITES to facilitate limited (i.e. quota based) export of domesticated elephants should be examined.
References


### Annex 1. Wild elephants in India (2000)

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![Distribution of wild elephants (2004)](image-url)

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Annex 3. A sample of an OWNERSHIP CERTIFICATE¹

**FORM 13**  
[See Rule 36]

**Certificate of Ownership**

Office of the  
__________________  
__________________

Name  
__________________

Address  
__________________

It is hereby certified that Sri __________________ has under his control, custody or possession the following animals, animal articles, trophies, uncured trophies, specified in Schedule I or Part II of Schedule II to the Wild Life (Protection) Act, 1972.

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Date:  

Seal:  

Chief Wild Life Warden

¹ From Wildlife Protection (Karnataka) Rules, 1973
Question and answer session

Q1: How valid are the census figures? Increases or decreases tend to mean that earlier surveys were not as good as later ones. Is this the case in India?
A1: Later figures are better of course, but India has been doing good censuses for some time, at least since the 1970s.

Q2: How are elephants used in agriculture?
A2: They are used to plough fields, especially in Andra Pradesh.

Q3: Are elephants used for patrols in the national parks?
A3: Yes, for anti-poaching campaigns or in areas where other forms of transport are not possible. The number of elephants used could easily be doubled. Project Elephant will provide finance to purchase unemployed elephants in the areas where they will be used.

Q4: You stated that you’d like to encourage the trade in live elephants and for more troublesome wild elephants to be captured. Don’t you think it would lead to more elephants in the wild being captured for sale, not just troublesome elephants? Who would monitor the trade?
A4: I don’t think it would be a problem because the existing law works well, only target elephants, i.e. troublesome elephants, are captured.
The care and management of domesticated elephants in Malaysia

Mohd. Shariff Daim

Introduction

With the independence of Malaya in 1957, a paramount need to ensure livelihoods for all Malaysians led to the opening up of land throughout the country, including land that was known to be elephant habitat. Each year, thousands of hectares of elephant habitat were taken over by oil palm and rubber schemes and various infrastructure developments such as dams, highways and new settlements. This reduction in elephant habitat because of human encroachment resulted in serious conflicts between man and elephant. As the human population of the country (current population 19 million) has increased the number of man-elephant conflicts and the costs of damage caused by elephants has escalated.

From 1972 to 1978, there was a loss of RM84,125,832 because of elephant depredation in Peninsular Malaysia. In the following ten years, the losses amounted to RM300 million.

The mitigation of these conflicts must be based on a national compromise between meeting the interests of the farmers and the interests of the elephants.

The Department of Wildlife and National Parks (DWNP) established the Elephant Management Unit in 1974 to address human–elephant conflicts. One of its first tasks was to domesticate some elephants so that they could assist in relocating wild elephants. This led to the introduction of elephant mahouts in Malaysia.

Malaysia has lost its cultural heritage of keeping and using elephants in daily life, unlike in India and Sri Lanka where elephants are still used in religious ceremonies. Malaysian history tells of the Sultans of Malacca, Perak, Kelantan, Kedah and Pahang keeping elephants at their palaces for use in ceremonies, wars and as beasts of burden.

It was reported by B.H. Weiss (The Strand Magazine Vol. IX.1895 London) that a Malay Chief of a district in Perak, a state in Peninsular Malaysia, used the services of a pawang (traditional spiritual medicine man with supernatural powers) to capture 12 wild elephants. The whole operation involved 50 Malays and Sakais (aborigines) and a few khoonkies (elephants trained to help in the capture or relocation of wild elephants). The wild elephants were restrained in a kubu (stockade) and then taken to a chelong (the stop where the elephants undergo training).

This record shows that the elephant catching and training method originally used in Malaysia was quite similar to the kheddah method that is being practised in India and Myanmar and similar to the krals in Sri Lanka. Traditional elephant catching in Malaysia was more influenced by Indian practices than Thai practices. Unfortunately, this tradition of catching wild elephants ended for some reason in the early nineteenth century. The tame elephants were sold as beasts of burden.

In the early nineteenth century most of the elephants were used to carry tin ore in the British Occupied Settlement. After the Second World War, there was rapid development of roads and a transportation system. Consequently, the need for the services of these elephants diminished together with the culture and tradition of mahouts. At present there is only one individual, Ibrahim Bin Yahya, from Kelantan, who can be considered a traditional elephant mahout, having acquired the skills from his forefathers. He is 70 years old and the tradition of keeping elephants will die out with him as his children are more comfortable using lorries and pick-up trucks rather than elephants.
In 1974, when the DWNP set up the Elephant Management Unit, it engaged six mahouts and four *khoonkies* from Assam, India to train the local elephant rangers to catch, ride, train and manage the elephants at the base camp. It was considered an alien skill for them to acquire and it was considered more a job than a way of life. However, the training period was too short and the local rangers could only learn how to ride, train and manage the wild elephants at the base camp.

The Indian community in Malaysia still uses elephants for their temple ceremonies. They rent the elephants from the private owners or the zoos as and when required. They are not keen on keeping the elephants at the temple or taking care of them by themselves.

**Wild elephant distribution in Peninsular Malaysia**

In the early nineteenth century, elephants were found in all the states of Malaysia. However, towards the close of the twentieth century elephants could be found only in seven states. The current population of elephants in Peninsular Malaysia is estimated to be 1 200 to 1 500. They are distributed in small herds within a small home range because of the limited availability of lowland forest reserves and fragmented forests. The states of Pahang, Kelantan and Terengganu have the highest densities of elephants whereas Johore, Kedah and Perak show moderate elephant densities.

Elephant distribution shows a progressive retreat from the south and west of the Peninsula. This has arisen because (a) land clearance has been earliest and most rapid in the southern and western states such as Johore, Selangor, Perak and Negeri Sembilan; and (b) elephants from places of conflict have been translocated to sites in the north and east such as Taman Negara and Terengganu.

As this process of land use change has occurred, there has been no deliberate maintenance of corridors to allow for elephant movements or to maintain viable populations. Historically, land use planning agencies such as the Town and Country Planning Department have never taken into account elephant distribution and population requirements when carrying out their work. They now have better access to information on wildlife, but the effectiveness of their planning is limited by various constraints including the separation of the planning process at Federal level from the implementation process at state level. Within states, large blocks of land have been allocated to plantation agriculture, and cleared and planted with no particular sequencing or other considerations on how best to avoid man-elephant conflicts.

Since 1991, two states, Perlis and Selangor, have lost their last elephants as they have all been translocated to Ulu Belum (northern Perak) owing to intense pressure from development. Negeri Sembilan will be the next state to follow as there is only one herd there made up of three elephants.

By the year 2000, there will be no more elephant herds on the western coastal plain of Peninsular Malaysia. Most of the elephant herds are now found on the eastern side of the Main Range in the states of Kelantan, Terengganu and Pahang, where there is a large amount of forest, some of which is protected within Taman Negara National Park. Even in these three states, however, the forest does not constitute a continuous block.

**Population estimates of elephants**

**Wild elephants:**

The elephant population of the Peninsula has been variously estimated from time to time as shown in Table 1. Early estimates tended to be based on reported village or smallholder conflicts, and to be limited by lack of accessibility to remote areas. Later estimates have been able to draw on a wider range of information and greater coverage, but have tended to add all additional findings to previous estimates, thus producing possibly inflated estimates or double counting.
Elephants in Malaysia

Table 1. Estimated wild elephant population

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated elephant population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>681*</td>
</tr>
<tr>
<td>1977</td>
<td>556*</td>
</tr>
<tr>
<td>1987</td>
<td>824*</td>
</tr>
<tr>
<td>1991</td>
<td>954*</td>
</tr>
<tr>
<td>1999</td>
<td>1,115 to 1,171**</td>
</tr>
</tbody>
</table>

* Mohd Khan, ** Shariff Daim

DWNP uses the footprint-count method. This method of survey is found to be very conservative. From experience, the elephant number tends to be underestimated because of the overlapping of footprints along the elephant track and also the condition of the ground where the measurement was taken. An increase of 20 percent would probably be more realistic (Khan, 1990). This leads to an estimated current total population of between 1,200 and 1,500 elephants. To get a more accurate population estimate, DWNP should develop a better technique of counting the number of elephants in the forest. In India, Sri Lanka, Thailand and Sabah, Malaysia they use the dung-count method.

Domesticated elephants:

Before the Protection of Wildlife Act 1972 (Act 76) was implemented, there was no proper registration of domesticated elephants in Peninsular Malaysia. In 1997 the number of domesticated elephants was only 20 (Daim, 1996). In the past three years the number has increased rapidly to 36 (Table 2). The sex ratio of elephants is 0.44 males to 1 female. We can expect the number of domesticated elephants to increase even further. The increase in number is because of the new government policy of using elephants in its ecotourism industry. The A’Famosa Safari Wonderland has a special permit from the Minister of Science, Technology and Environment (STE) to keep 20 elephants.

Table 2. Distribution of domesticated elephants registered under special permit with the Department of Wildlife and National Parks, Peninsular Malaysia (DWNP)

<table>
<thead>
<tr>
<th>Name</th>
<th>Ownership</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiping Zoo</td>
<td>Taiping Town Council Perak State.</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Johor Zoo</td>
<td>Johor Baru Town Council Johor State.</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Johor Palace Mini Zoo</td>
<td>Sultan of Johor Johor State.</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>National Zoo</td>
<td>Zoological Park Society Selangor State.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Kuala Krai Zoo</td>
<td>Kuala Krai Town Council Kelantan State.</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Kuala Gandah Elephant Training Unit</td>
<td>DWNP Federal Government.</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Zoo Melaka</td>
<td>DWNP Federal Government.</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Desaru Wildlife Adventure</td>
<td>Desaru Wildlife Adventure Sdn Bhd. Johor State.</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>A’Famosa Safari Wonderland</td>
<td>A’Famosa Wonderland Sdn Bhd. Melaka State.</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Private Owner</td>
<td>En Ibrahim bin Yahya Kelantan State.</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11</td>
<td>25</td>
<td>36</td>
</tr>
</tbody>
</table>

Note: Compiled by the author
The DWNP is faced with the challenge of monitoring the welfare of domesticated elephants in accordance with the law. In response the Department has come up with a new guideline for zoos and safaris. All elephant owners have to follow this guideline strictly.

The DWNP wildlife inspectors from the Law Enforcement Division in each state monitor the welfare of the state’s domesticated elephants. Private elephant owners have to renew their special permits annually. If the condition and the welfare of the elephants are not satisfactory the Director General of the DWNP will recommend to the Minister of STE to revoke the special permit in accordance with the law.

The population of domesticated elephants is only 2 to 3 percent of the total elephant population. There is no captive-breeding programme in Malaysia. There is no interaction between the wild elephants and the domesticated elephants unlike in Myanmar and Thailand where the domesticated female elephants are impregnated by the wild male elephants at the forest fringes. The Malaysian domesticated elephants do not contribute to the wild population.

The public and the NGOs are more sensitive towards the plight of elephants in captivity. They are the first to react if any of the elephants are mistreated and manage to attract the attention of the news media. Sometimes they act as a legal pressure group and can force the authorities to take action to improve elephant welfare.

Out of the 36 domesticated elephants in Malaysia, four have been imported from Myanmar, through a Memorandum of Understanding signed in 1997 between the DWNP Peninsular Malaysia and the Department of Forestry, Myanmar. These working elephants are used to help the DWNP Elephant Management Unit to carry out the elephant relocation programme.

**Employment of domesticated elephants**

In Peninsular Malaysia domesticated elephants are employed in three different ways:

1. **The Kuala Gandah DWNP Elephant Training Centre**

   The eight elephants at the Kuala Gandah DWNP Elephant Training Centre are specially trained working elephants used as *khoonkies* to help in carrying out the elephant translocation programme. This programme has been very successful in mitigating man-elephant conflicts in Malaysia. These conches play an important role in ensuring the success of the long-term elephant management plan in Malaysia.

   The working elephants are trained to restrain the wild elephants that are captured for relocation purposes. The training centre also raises public awareness of the country’s elephants. The mahouts are trained to run interpretative centres where the public awareness programmes are carried out.

   Because of great public demand, the DWNP has plans to utilize these elephant training centres for ecotourism. The elephants will be released in a 4.05 ha (10 acres) forest enclosed by electric fencing. The public can safely view the elephants in their natural habitat. The public can have elephant rides and watch the elephants bathing in the river. This programme is still in its infancy.

2. **Zoos and safaris**

   The twenty-six elephants in the zoos and safaris are used for zoo exhibits, elephant rides and performances. Some of the keepers have been trained locally by Indian and Thai mahouts.
3. Privately owned elephants

There are only two elephants that are privately owned and these are in Kelantan. They are employed to work in the rubber wood industry. These elephants have been trained to pull rubber wood logs from the plantation to be loaded onto a lorry. They are owned by the last traditional mahout in the country.

Mahoutship

The elephant rangers working for the Department of Wildlife and National Parks, Malaysia were trained by elephant mahouts from Assam, India. These rangers were specially trained for the elephant relocation programme. Since 1974, they have captured and relocated more than 400 elephants from fragmented forests to protected forest. These rangers are extremely competent at handling wild elephants and the koonkies during the relocation operations.

As there are fewer elephant problems for the Elephant Relocation Unit to handle the DWNP plans to convert the Kuala Gandah DWNP Elephant Training Centre into an ecotourism area. The elephant rangers must now be trained to handle elephants for tourism proposes. They will receive their training either from Thailand or India as these countries already have very successful programmes using elephants in tourism.

All the mahouts are trained and self-taught. They are not from traditional elephant keeping families like in Thailand, India or Sri Lanka. All zoo keepers too are trained like the elephant rangers. Most of them have received only lower school education. With this background, they are keener on using physical control rather than the psychological method while handling the elephants.

Unlike in the West, zoo keepers and rangers still practise the hands-on method using chains and hooks to control the elephant. This seems to be very cruel by Western standards, where the hands-off method and hydraulic doors are used to manage elephants in musth. The A’Famosa Safari Wonderland hires all their mahouts and trainers from Thailand as it is quite difficult to get locals to work with the elephants.

Laws and registration

The Department of Wildlife and National Parks, Peninsular Malaysia (DWNP) is a federal department under the Ministry of Science Technology and Environment. Elephants are protected by the Protection of Wildlife Act 1972 (Act 76). The Act is enforced by the DWNP throughout the Peninsula. Under the Act it is an offence to kill or injure a wild elephant or to possess or trade in any elephant part or product.

They can only be shot and killed by sanction of the DWNP when there is reason to believe that if the elephant is not shot and killed it may cause loss of human life.

Moreover, if any person provokes or wounds an elephant that consequently becomes an immediate danger to human life, the person, when found guilty can be fined, imprisoned or both.

Any person who unlawfully shoots, kills, takes or unlawfully possesses an elephant or part of it or its trophy is guilty of an offence. He shall on conviction be liable to a fine, imprisonment or both. The penalty is higher if the elephant is a female or immature.

An elephant is deemed to be immature if the two tusks together weigh less than thirty pounds or its forefoot measures less than seventeen inches in diameter.
There are general exceptions and presumptions in the Act. The law permits the domestication of elephants in zoos, safaris and by individuals. The Minister, on the advice of the DWNP, may grant not more than one special permit to each applicant to catch, confine, breed, keep, import or export any elephant or part thereof. In Malaysia, the catching of elephants is only done by the DWNP.

The person or zoo should satisfy the conditions prescribed in the permit. The Minister of STE may attach any condition to the special permit, not contrary to the provisions of the Act. Any person or zoo that contravenes any of the conditions attached is liable to have the permit revoked and on conviction be liable to a fine, imprisonment or both.

Cruelty to elephants is also prohibited by the Act. Any person who injures, mistreats, starves, or confines in an enclosure or cage that is not conducive to the comfort or health of the elephant is guilty of an offence and shall on conviction be liable to a fine or imprisonment or to both.

The Act covers the need for the protection of elephants in their natural habitat as well as the needs of those in constant conflict with elephants, i.e. persons from the agricultural and tourism sectors. For conservation purposes, DWNP prefers capturing and relocating problem elephants to killing them.

Veterinary care and help

According to the latest Zoo Guidelines, drawn up by the DWNP, all zoos, safaris and private elephant owners are compelled to have their own resident veterinarian to take care of the health and welfare of the elephants. If they are unable to afford to employ their own veterinarian, they must engage an external veterinarian from a recognized establishment at least once a month to monitor the health and welfare of the elephants in their care. This is to ensure that the health and welfare of the elephants are properly maintained. If there is any outbreak of an endemic disease, they have to report it to DWNP and also to the Veterinary Department for further action. The veterinarian can also get assistance from the Veterinary Faculty of the University Putra Malaysia.

Summary and recommendations

In Malaysia, the domesticated elephant is treated differently from those in other countries such as India, Sri Lanka, Myanmar and Thailand. The DWNP uses elephants as a tool in assisting the rangers to carry out its translocation programme. There is minimal personal interaction or bond between the elephants and the rangers. In India the mahouts grow up together with the elephants and the bond between them is very strong.

Compared with the traditional mahouts, the rangers are more educated and are more exposed to modern drugs, medicine and techniques in handling and managing the elephants. They do not acquire the cultural and traditional practices of using ceremonies, rituals and superstitions in managing the elephant. These rangers are government servants who can be transferred anywhere and to different units within the Department. There is no tradition whereby their children will grow up with the elephants and become mahouts at the training centre.

The DWNP should set up a special programme with the help of other countries with deep-rooted elephant traditions to create a stronger bond between the elephants and rangers. Admittedly, it is quite difficult to revive the elephant keeping culture and traditions of a country that is economically and socially advanced.
Question and answer session

Q1: The problem of a declining number of mahouts will be faced by all countries at some time, one solution is to give them dignity – perhaps a licence or badge of recognition similar to a tourism guide. What do you think?

A1: I agree. I think they would need training first and then we could do something like this.

A participant from Indonesia stated that such a system would be good in Indonesia too. There could be different grades of mahout such as novice, junior and senior. There could be training courses that would deal with elephant health care and other important topics. Perhaps as a first step there should be a training of the trainers course.

Richard Lair stated that the Elephant Conservation Center in Thailand was opening a mahout training school and they would like to have students from all over the region, especially Indonesia. They are thinking of overcoming the language barrier by hiring trainers from the South of Thailand who speak jawi as this is close to bahasa Indonesia. Those involved in the tourism industry don’t know enough English to teach in the language, they only know pidjin English.
A happy elephant with sugarcane fed by a visitor, the Maesa Elephant Camp, Chiang Mai, Thailand.
Introduction

One hundred years ago there were about 100,000 domesticated elephants in Thailand, almost all of them employed in the logging industry. In 1965, the Department of Livestock Development (DLD) reported a figure of 11,192. This number had decreased to 3,381 in 1985 and to 2,257 in 1998. Thus, the population appears to be decreasing at a rate of about 3 percent per year.

In 1989, a government logging ban to preserve the existing forestland—which amounts to only about 25 percent of the country—caused 70 percent of domesticated elephants to become unemployed.

Many elephants have been forced to stray into big cities in order to earn a living for themselves and their mahouts thus posing a danger to the general public. Most of these elephants receive insufficient food and water and are sometimes seriously injured in traffic accidents.

Developing ecotourism sites in the various regions of the country might offer more suitable employment opportunities for the elephants and their mahouts, but an appropriate and comprehensive ecotourism development plan should first be formulated.

Existing elephant-related tourist activities and working conditions

Because of the logging ban, and as a result of increasing interest in ecotourism, elephants and their mahouts can be found working in the tourism industry in all regions of the country, usually in elephant camps. Tables 1 to 5 present the results of the first nationwide field survey of elephant-related ecotourism sites in Thailand.

Problems associated with using elephants in ecotourism

The biggest problems for elephant owners are providing them with sufficient food each day, meeting the high cost of the large amount needed and removing the dung. Elephants can only digest 40 percent of what they eat, so this means that if you provide 200 kg of food per day there is a significant amount of dung to remove.

There are also land use conflicts that pit elephant owners against other members of the community, including government agencies.

Northern Thailand:

There are 14 elephant camps with 536 elephants in four provinces.

As almost all of the feeding areas and trekking routes are in forest reserve lands, there are conflicts between the camp owners and the Forestry Department. The use of these lands has to be certified by the Royal Forest Department. This is a slow process, but meanwhile the tourism business is growing rapidly. Conflicts are still going on and are very serious.
<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working conditions and welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Chiang Mai</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Maesa (private)</td>
<td>85</td>
<td>All belong to the camp.</td>
<td>- Show (circus) - Trekking - Elephant nursery - Restaurant - Elephant painting</td>
<td>- 90 mahouts provided with food and room - half Karen/half local people. - Trekking is the main activity. - Good private management. - Charge: 350 baht for an hour of elephant riding and a ride in an oxcart. - 1 resident vet.</td>
</tr>
<tr>
<td>1.2 Maetaman (private)</td>
<td>35</td>
<td>All belong to the camp.</td>
<td>- Local museum - Trekking - Pulling an oxcart - Rafting</td>
<td>- 40 mahouts provided with free rice and shelter: half Karen &amp; half Thai. - No resident vet. but under the supervision of the Mobile Elephant Clinic (MEC) run by FIO/RSPCA and the local vet. - Charge: About 300 baht per hour.</td>
</tr>
<tr>
<td>1.3 Taeng Dao (private)</td>
<td>40</td>
<td>All belong to the camp.</td>
<td>- Elephant show - Logging demonstration - Trekking - Restaurant - Local goods outlet</td>
<td>- 40 local mahouts receive rice and room. - Good management with great environment. - Good pollution management. - Local food. - Appropriate working hours (show only in the morning). - Charge: 300 baht/hour for a package consisting of elephant trekking/oxcart ride and bamboo rafting.</td>
</tr>
<tr>
<td>1.4 Mae Taeng (private)</td>
<td>35</td>
<td>25 belong to the camp and 10 are hired.</td>
<td>- Show (circus) - Trekking - Pulling an oxcart - Rafting</td>
<td>- 40 local and Karen mahouts receive room and rice. - No resident vet. but under supervision and care of EMC and local vet. - Charge: 300 baht/hour.</td>
</tr>
<tr>
<td>1.5 Jungle Raft (private)</td>
<td>25</td>
<td>3 belong to the camp and 22 are hired.</td>
<td>- Show (circus) - Trekking - Pulling an oxcart - Rafting</td>
<td>- 25 local and Karen mahouts receive rice and room. - No resident vet. but EMC and local vet. - Charge: 300-350 baht/hour.</td>
</tr>
<tr>
<td>1.6 Pong Yaeng Nai</td>
<td>45</td>
<td>10 belong to the camp and 35 are hired.</td>
<td>- Elephant show - Pulling an oxcart - Restaurant - Trekking</td>
<td>- 45 local and Karen mahouts receive rice and room. - No resident vet. but EMC and local vet. - Charge: 300-350 baht/hour.</td>
</tr>
<tr>
<td>1.7 Mae Ping</td>
<td>45</td>
<td>All hired.</td>
<td>- Pulling an oxcart - Bamboo rafting - Trekking</td>
<td>- 45 local and Karen mahouts receive rice and room. - No resident vet. but EMC and local vet. - Charge: 300-350 baht/hour.</td>
</tr>
<tr>
<td>1.8 Mae Wang</td>
<td>50</td>
<td>Gathered from local owners and Karens.</td>
<td>- Trekking</td>
<td>- This camp is different. There is no owner but it is managed by the local elephant owners. They share the benefits according to the number of hours worked. - Charge: 270-350 baht/hour.</td>
</tr>
<tr>
<td>1.9 Others (private)</td>
<td>30</td>
<td>3-5 animals in potential tourist site.</td>
<td>- Trekking</td>
<td>- Owners feed and work with their own elephant. - Charge: 300-400 baht/hour.</td>
</tr>
<tr>
<td>Province and camp</td>
<td>No. of elephants</td>
<td>Status of elephants</td>
<td>Activities</td>
<td>Working conditions and welfare</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>---------------------</td>
<td>------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td><strong>2. Lampang</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2.1 Thai Elephant Conservation Center (TECC) (Government agency, FIO) | 48 | All belong to FIO. | - Show and demo  
- Homestay  
- Mahout school  
- Elephant painting  
- Trekking  
- Elephant orchestra  
- Sale of souvenirs  
- Exhibition | - 110 experienced and certified mahouts.  
- Free housing/medical care and educational support provided.  
- Government standard salary (starts from 5 000 baht/month) and fringe benefits.  
- 4 elephant doctors.  
- 2 special teams responsible for managing aggressive elephants.  
- Charges: 50 baht for show; 400 baht/hour for riding; 150 baht/night for room. |
| **3. Chaing Rai** |                  |                     |            |                                |
| 3.1 Karen Ruam Mitra (Private) | 30 | Belong to the different owners who have formed an informal co-operative (Karen owners). | - Trekking | - Each owner has 1-5 elephants.  
- Owners care for the elephants themselves.  
- Charge: 300 baht/hour for riding. |
| 3.2 Mae Yao (Private) | 18 | Belong to the different owners who have joined together, especially Yao businessmen. | - Camping  
- Trekking | - In this case the owners are not ‘elephant men’ but businessmen from one of the hill tribes who hire Lisor people as mahouts.  
- Not interested in elephants’ welfare.  
- No clear charges. |
| **4. Maehongsorn** |                  |                     |            |                                |
| 4.1 Ban Pha Bong (Private) | 30 | Separated into small groups. | - Homestay  
- Trekking | - The elephants are used in association with a home stay programme.  
- 30 local mahouts.  
- Mahouts take care of the elephants by themselves.  
- Charges: 300 baht/hour. |
| 4.2 Pai (District) (Private) | 20 | Separated into small groups. | - Homestay  
- Trekking | - The elephants are used in association with a home stay programme.  
- 30 local mahouts.  
- Mahouts take care of the elephants by themselves.  
- Charges: 300 baht/hour. |

**Notes**
- The Maesa elephant camp is the biggest and probably the best organized one in Thailand.
- In April, the Karen elephant owners who are known as natural elephant experts go back home with their elephants to participate in the “Mud Mir Chang” or the “Elephant Homecoming Celebration”. Sometimes, they do not return to their elephant camps afterwards.
- The rate for hiring one elephant is 7 000-8 000 baht per month in the high tourist season and 3 500-4 000 in the low season.
- The monthly salary of a mahout (except for the TECC Lampang) is about 1 500 baht with accommodation, food and medical care.
- The average charge is 270-350 baht/hour.
### Table 2. Central Thailand

<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working conditions and welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Ayutthaya</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1.1 Pang Chang Lai Panait (or Ayutthaya Elephant Camp) (Private) | 35 | 16 belong to the camp and 19 are hired. | - Elephant sightseeing  
  - Mini show  
  - Painting | - 35-40 mahouts Swe (Surin elephant men) and Karen provided with accommodation, food and medical care.  
  - Local vet available.  
  - Activities focused on way of life of elephant and mahout. |
| **2. Nakorn Pathom** |                  |                     |            |                                |
| 2.1 Rose Garden (Private) | 9 | All are hired. | - Elephant riding  
  - Mini show | - 14 mahouts provided with accommodation, food and medical care.  
  - Local vets available.  
  - Activities focused on way of life of elephant and mahout. |
| **3. Samut Prakan** |                  |                     |            |                                |
| 3.1 Crocodile Farm (Private) | 9 | All belong to the farm. | - Mini show (7)  
  - Elephant riding (2) | - 9 mahouts plus 3 assistant mahouts provided with accommodation.  
  - 2 staff vets available.  
  - Elephants are released for free grazing outside the farm in the evening.  
  - Charge: 20 baht per person for 3 minutes riding. |

**Notes**

- The Ayutthaya Elephant Camp, established in 1997, holds an additional 45 elephants in camps in Kanchanaburi, Phuket, and Chaiyaphum provinces.
- The Rose Garden, a country resort established in 1965, started the Thai Village Cultural Show using elephants as early as in 1969. They have recorded three generations of elephants.
- The elephant show at the Crocodile Farm started about 35 years ago.
### Table 3. Eastern Thailand

<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working conditions and welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Chonburi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Khao Kaew Open Zoo (Government)</td>
<td>8</td>
<td>All are hired.</td>
<td>- Show rides</td>
<td>- 8 mahouts under the supervision of zoo management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- 3 vets available for zoo animals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Charge: about 400 baht/hour.</td>
</tr>
<tr>
<td>1.2 Sriraja Zoo (Private)</td>
<td>15</td>
<td>2 belong to zoo and 13 are hired.</td>
<td>- Short rides</td>
<td>- 15 mahouts provided with room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Medical care from local vet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Charge: 250 baht/hour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Camping area is small.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- No feeding area.</td>
</tr>
<tr>
<td>1.3 Paniat Chang</td>
<td>30</td>
<td>22 belong to the camp and 8 are hired.</td>
<td>- Trekking - Short rides - Show and demo</td>
<td>- 30 mahouts provided with food and room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Most mahouts come from Northern Thailand.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Well organized and good management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Adequate food supply.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Charge: 250-300 baht/hour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Local vet and MEC available.</td>
</tr>
<tr>
<td>1.4 Suan Nong Nuch</td>
<td>18</td>
<td>All belong to the camp.</td>
<td>- Show - Play ground - Zoo garden for children</td>
<td>- 18 mahouts from Surin provided with room and food.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Local vet and MEC available.</td>
</tr>
<tr>
<td>1.5 Moo Ban Chang Pattaya</td>
<td>30</td>
<td>20 belong to the camp and 10 are hired.</td>
<td>- Short rides and mini show</td>
<td>- 30 mahouts provided with room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Local vet and MEC available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Charge: 300 baht/hour.</td>
</tr>
<tr>
<td>1.6 Suan Chang Pattaya</td>
<td>28</td>
<td>5 belong to the camp and 23 are hired.</td>
<td>- Short rides - Restaurant - Local goods outlet</td>
<td>- 28 mahouts provided with room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Local vet available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Charge: 250-300 baht/hour.</td>
</tr>
</tbody>
</table>

**Notes**

- In the eastern part of Thailand, almost all of the tourists who visit the elephant camps come from East Asian countries such as Korea, Taiwan, and China (except Paniat Chang that has a great number of European tourists). They are generally interested in short rides.
- Most camps do not have feeding areas large enough for elephants. Only a few have wide feeding areas.
- Only the Paniat Chang camp uses northern mahouts because the owner’s wife is from northern Thailand. The mahouts in other camps come from Surin.
- The rate for short rides is on an average 300 baht/hour. In popular tourist areas it increases to 3 000 baht/hour.
- The monthly rate for hiring an elephant is about 7 000-8 000 baht.
### Table 4. Western Thailand

<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of Elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working Condition and Welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kanchanaburi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Maesah (private)</td>
<td>30</td>
<td>16 belong to the camp and 14 are hired.</td>
<td>- Trekking - Rafting</td>
<td>- 30 Karen mahouts provided with housing. - The oldest camp in town. - Charge: 250-300 baht/hour. - Medical care from EMC and local vet.</td>
</tr>
<tr>
<td>1.2 Pu Tong</td>
<td>26</td>
<td>6 belong to camp and 19 are hired.</td>
<td>- Trekking - Rafting</td>
<td>- 26 Karen mahouts provided with housing. - The oldest camp in town. - Charge: 250-300 baht/hour. - Medical care from EMC and local vet.</td>
</tr>
<tr>
<td>1.3 Sai Yoke</td>
<td>25</td>
<td>8 belong to camp and 17 are hired.</td>
<td>- Trekking - Rafting</td>
<td>- 25 Surin and Karen mahouts provided with housing. - The oldest camp in town. - Charge: 250-300 baht/hour. - Medical care from EMC and local vet.</td>
</tr>
<tr>
<td>1.4 Ban Mai Pattana</td>
<td>12</td>
<td>They belong to different Karen owners.</td>
<td>- Trekking - Rafting</td>
<td>- 12 Karen mahouts. - Each owner feeds his own elephants. - Vet care from local vet and Kasetsart University. - Charge: 250-300 baht/hour.</td>
</tr>
<tr>
<td>1.5 Som Nerk</td>
<td>5</td>
<td>All hired.</td>
<td>- Trekking - Rafting</td>
<td>- 5 Karen mahouts. - The oldest camp in town. - Charge: 250-300 baht/hour. - Medical care from EMC and local vet.</td>
</tr>
</tbody>
</table>

**Notes**
- All of them are located at good tourist sites and have feeding areas.
- Average charge: 230-300 baht/hour.
- Elephant hire rate: 8 000 baht/month.
- Medical care is provided by the local vet and Kasetsart University and there are also frequent visits from MEC.
## Table 5. Southern Thailand

<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working conditions and welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Phuket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Siam Safari</td>
<td>35</td>
<td>All hired</td>
<td>- Show and demonstrations</td>
<td>- 35 mahouts and supporting staff provided with housing and medical care.</td>
</tr>
<tr>
<td>1.2 Phuket Fantasy Company</td>
<td>35</td>
<td>All belong to the company.</td>
<td>- Trekking</td>
<td>- Well organized and clear information.</td>
</tr>
<tr>
<td>1.3 Karen Lagoon Elephant Trekking Club</td>
<td>28</td>
<td>All hired</td>
<td>- Indoor show</td>
<td>- Environmentally sound management.</td>
</tr>
<tr>
<td>1.4 Elephant Safari Trekking</td>
<td>15</td>
<td>All hired</td>
<td>- Trekking</td>
<td>- Charge: 500-1 000 baht/hour.</td>
</tr>
<tr>
<td>1.5 Tour Chang Pathong</td>
<td>5</td>
<td>All hired</td>
<td>- Trekking</td>
<td>- Local vet available.</td>
</tr>
<tr>
<td>1.6 Phuket Water Ski</td>
<td>5</td>
<td>All hired</td>
<td>- Trekking</td>
<td>- Charge: 500-900 baht/hour.</td>
</tr>
<tr>
<td>1.7 Sun Nature Tour Company</td>
<td>13</td>
<td>All hired</td>
<td>- Trekking</td>
<td>- 13 local and Surin mahouts provided with housing.</td>
</tr>
<tr>
<td>1.8 Viking Food Center</td>
<td>8</td>
<td>All hired</td>
<td>- Short rides</td>
<td>- Local vet available.</td>
</tr>
<tr>
<td>1.9 Phuket Snake Farm</td>
<td>5</td>
<td>All hired</td>
<td>- Short rides</td>
<td>- Charge: 500-900 baht/hour.</td>
</tr>
</tbody>
</table>

- Show and demonstrations
- Trekking
- Homestay
- Sightseeing package
- Restaurant
- Pulling an oxcart
- Indoor show
- Restaurant
- Additional tourist facilities
- 35 mahouts and supporting staff provided with first class housing.
- Outside elephant food supply.
- Well organized and clear information.
- 1 vet
- Charge: 1 500 baht/person/show.
- 28 local and Surin mahouts provided with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
- 15 local and Surin mahouts provided with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
- 5 local and Surin mahouts provided with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
- 5 local and Surin mahouts provided with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
- 8 local and Surin mahouts with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
- 5 local and Surin mahouts provided with housing.
- Local vet available.
- Charge: 500-900 baht/hour.
<table>
<thead>
<tr>
<th>Province and camp</th>
<th>No. of elephants</th>
<th>Status of elephants</th>
<th>Activities</th>
<th>Working conditions and welfare</th>
</tr>
</thead>
</table>
| Island Safari    | 25              | All hired.          | - Short rides  
- Trekking | - 25 local and Surin mahouts provided with housing.  
- Local vet available.  
- Charge: 500-900 baht/hour. |

**Notes**
- Southern Thailand is the highest income tourist site for elephants, but a lack of feeding areas is its weak point.
- Almost all of the elephants and mahouts come from the northeast region of Thailand.
- Mahouts get a bonus of 1 baht for every minute of riding and are given a room to stay in and an allotment of rice.
- Working hours are 07.00–9.00 hours.
- Rate of hiring an elephant is 9 000–12 000 baht/month.
- Elephant care mostly comes from local vets.
- Short rides are 10 minutes, 15 minutes, 30 minutes, and trekking is 60 minutes or more.
Central Thailand:

The problem is somewhat different from that in the north, but it also involves conflicts of interest.

There is an ongoing conflict between the owner of the Ayutthaya Elephant Camp, which has 35 elephants, and the Fine Arts Department as the camp is in the middle of the World Heritage site of Ayuthaya, the ancient capital of the country.

Another conflict is related to water pollution: although the camp’s owner has made a serious attempt to clear the elephants’ dung, numerous nearby waterways and reservoirs have been adversely effected.

Eastern Thailand:

There are six elephant camps in Chonburi province with 129 elephants.

The number of tourists visiting these elephant camps is increasing but competition is very fierce. The only way to attract tourists is to reduce the riding fee to a reasonable rate. This then makes it necessary for the elephant to work five to six hours a day to reach the desired income of 400 baht a day. This condition has forced some mahouts and elephants to leave the camps and go to the big cities.

Western Thailand:

There are six elephant camps in Kanchanaburi with a total of 116 elephants. This region is an appropriate site for ecotourism. It is an excellent tourist destination with an adequate feeding area and tourism is growing in the province. However, there still are some conflicts between the camps’ owners and the Forestry Offices or the Local Administrative Organization.

Southern Thailand:

There are ten elephant camps in Phuket province with 174 elephants. Although the camp owners have a high, regular income there are too many elephants considering the number of tourism sites and feeding areas. A good solution would be to limit the number of elephants on the island.

Future perspective

The domesticated elephants in Thailand can be categorized into three groups as follows:

- Unemployed elephants;
- Tourism elephants; and
- Street wandering elephants.

The largest group is the unemployed elephants that are estimated to number between 1200 and 1400. The second largest group is the tourism elephants that number over 1000 animals, and the smallest group consists of wandering elephants that amount to about 100 in various cities. There are also an undetermined number of domesticated elephants being used in illegal logging operations.

To solve the overall problem, we should concentrate on all of these groups of elephants as the elephants move between these three groups. But the tourism industry should be the main source of permanent jobs for domesticated elephants in Thailand. A model multi-component, multi-site tourism-related project currently being planned by the FIO is described in the following paragraphs.
Thai elephants' New World Project

Concept:

The Thai elephants’ New World Project is designed to provide a suitable natural habitat for elephants, and to provide them with excellent health care and a good quality of life. Essentially, the project consists of the construction of elephant conservation centers and associated facilities. The project will fully conform with all relevant Thai laws.

Thai Elephant Conservation Centers (TECC):

The centers will comprise two types of area: a forest area for growing the elephants’ food and the Elephant Conservation Area. The Elephant Conservation Area needs to be fertile so elephants can live there naturally. The land has to be improved to provide them with water and food sources. Measures to prevent elephants from disturbing and destroying cultivated areas and surrounding communities need to be decided. The Thai Elephant Conservation Centers will comprise:

1) Provincial Center

The provincial center will coordinate the task of helping the elephants in each province and will provide elephant-related information and spread knowledge about elephants throughout the region. Each provincial center will not only co-operate with each other, but also with other foundations to help straying elephants, out-of-work elephants, unwanted and donated elephants, handicapped elephants, etc. The provincial center will send all these types of elephants to the Elephant Preparation Center to be classified.

2) Elephant Preparation Center

The center’s duty is to take initial care of the elephants’ health, and classify them into the following categories before sending them to the Conservation Center:

- suitable for returning to their natural habitat;
- bulls or cows suitable for breeding;
- old or handicapped elephants;
- elephants with a record of killing people; and
- elephants with suitable temperaments for participating in shows and the like.

3) Curing Center

This center will have highly trained staff and modern equipment and will treat those elephants in need of serious medical care. The responsibilities and duties of the curing center are:

- curing and nursing both inbound and outbound elephants;
- developing elephant health;
- taking care of elephants that have been cured but cannot work any more or cannot go back to live in the forest alone (handicapped elephants);
- training and providing knowledge to the owners or mahouts, the Conservation Center’s staff, the private sector, and the general public; and
- co-operating with the government sector and other sectors involved in controlling rampaging elephants and elephants in musth, notifying communities about any dangers.

4) Elephant and Mahout Training School

Elephants and mahouts will be given training certificates certifying that they have been trained to acceptable standards. The training school will have the following duties:

- to train and increase the knowledge and skills of existing mahouts;
• to train new mahouts;
• to train those elephants of suitable age for work;
• to classify the mature elephants and provide them suitable work to do;
• to determine the criteria and issue the certificates to certify the quality of elephants and
  mahouts; and
• to design the school curriculum.

5) Elephant Research and Development Center

This center will conduct research concerning the elephants’ food, health and illnesses. It will
help to strengthen elephant breeding programmes and act as a resource center to co-operate,
exchange technical knowledge and elephant news both inside and outside the country.

6) Elephant Museum

The elephant museum will comprise exhibition halls divided into permanent, temporary, and
open-air exhibition areas, a lecture room or auditorium, data center and library. Its purpose is
to strengthen Thai elephant conservation among the Thai people. It will collect data and
spread knowledge and basic understanding about the biology and nature of Thai elephants to
the youth, students and general public. Besides supporting tourism, it will create new jobs
and this will spread income to the locals employed in the elephant museum.

7) Nature Study Center

The activities in the center will comprise youth camps, overnight camps, white nature camps
(against drug addiction), nature conservation camps with study activities, trekking to admire
nature, the promotion of local cultures and souvenir development on elephant motif. It will
act as a center for exchanging knowledge in the international arena. The purpose of the center
is to promote nature study without altering the ecology of any area and to educate the youth
and tourists to behave properly in the forest.

The center will provide learning materials, such as nature study manuals.

8) Tourism Development and Service Center

The center will provide the tourists with knowledge, understanding and comfort when
traveling to various tourism sites. Besides, it will be the point where tourists can rest or call
for help in case of difficulties. It will also develop and maintain the natural resources and this
will result in an increase in the number of tourists staying overnight in the Thai Elephant
Conservation Centers that will add more income to the mahouts and local communities.

The number of elephants in FIO’s Thai Elephant New World Project

The elephants managed by this Project will be allowed to live as natural as possible in an expected
density: one elephant per 50 rai (8 ha). The total number of elephants in each center is calculated as
shown in Table 6.

Development and improvement of the area:

The project management should:

1) Maintain and promote the outstanding natural characteristics of each project area and only
   permit activities that are in harmony with these.

2) Determine the carrying capacity of the area and ensure that the number of people and animals
   using the area does not exceed this.

3) Provide appropriate facilities and ensure that they harmonise with the natural surroundings.
Table 6. Expected numbers of elephants in the project centers and camps

<table>
<thead>
<tr>
<th>Geographical area</th>
<th>Area (rai)</th>
<th>Number of elephants</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Permanent</td>
<td>Temporary</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elephant Conservation Center, Lampang</td>
<td>18 393</td>
<td>100</td>
<td>300</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Elephant Conservation Center, Surin</td>
<td>23 318</td>
<td>200</td>
<td>300</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Elephant Conservation Center, Krabi</td>
<td>2 000</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Elephant Camp at Jed Kod Forest Plantation, Saraburi</td>
<td>2 000</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Elephant Camp at Thong Pha Phum Forest Plantation, Kanchanaburi</td>
<td>2 000</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47 711</strong></td>
<td><strong>390</strong></td>
<td><strong>660</strong></td>
<td><strong>1 050</strong></td>
<td></td>
</tr>
</tbody>
</table>

Note: 6.25 rai is equal to 1 ha.

**Zoning scheme:**

The area used is classified into three zones:

1) **Public Zone:** This zone is for project buildings and to support the visitors to the center and the staff of the Thai Elephant Conservation Center. The area can be used to its full potential. The activities at this zone are Tourist Information Center, Elephant Exhibition Center and Art and Culture in Elephant Village, Elephant Museum, Training and Research Services, etc.

2) **Semi-Public Zone:** This is a restricted zone that will have some buildings and landscape improvements to support the centers’ staff. Part of it can be utilized by visitors. This area is used more sparsely than the Public Zone. The Elephant Preparation Center, Elephant Curing Center, Elephant and Mahout Training School and the Research and Development Center, etc will be located here.

3) **Reserved Zone:** This is part of the original forest that will be planted with supplementary crops, especially for elephant food. It will also be the location for the centers’ water resources. The zone will be used for feeding both tethered and free elephants and will also support trekking for the tourists.

**Basic infrastructures:**

Basic infrastructures will consist of:

- transportation routes;
- drainage system;
- water sources;
- municipal water system;
- waste collection and disposal system;
- water collection and treatment system; and
- power and electrical system.

**Marketing and personnel development:**

When the Elephant Conservation Centers are ready to open tourism marketing, activities will be carried out so as to attract visitors and gain incomes for the elephants and centers. Elephant trekking will be offered as well as elephant riding, bird watching, nature study activities, bicycling and others. Besides having the tourism routes between the centers and resorts both in and outside the provinces, the communities around the centers will benefit from the increase in tourism.
Some of the profit will be used to give the youth a chance to be trained and for marketing scholarships. As for the locals, they will be supported to develop handicrafts such as cloth weaving, making souvenirs related to elephants, and to cultivate mixed crops, especially crops for elephant food or quick growing plants such as mulberry, together with rice farming. The straw and elephant food will be sold to the Thai Elephant Conservation Centers.

Preliminary environmental impact assessment:

The development of the Thai Elephant Conservation Center will involve some transformation of the natural environment and there may be some unintended adverse environmental impacts, including impacts on local communities. During the construction and implementation phases the following measures are proposed:

1) Construction phase
   a) Locate all buildings on a plain or an area where there is little slope.
   b) Locate the buildings some distance from the natural water sources and institute measures to prevent the soil sediment from the construction area flowing into the water sources.
   c) Start construction in the dry season
   d) Give preference to the locals when hiring workers.

2) Implementation phase
   a) Provide tourists/visitors with sufficient number of litter boxes in all areas of the Thai Elephant Conservation Center. Collect and dispose of refuse daily.
   b) Provide water treatment for the staff and the tourist service areas. The wastewater from the Elephant Health and Nursing Center and the Research Center should be treated before being discharged into natural water sources.
   c) Make the elephants drink before bathing as they will excrete immediately after drinking. To conserve water elephants should only be bathed twice a day. A new pond will be constructed away from the natural water sources especially for the enjoyment of the elephant.
   d) Improve the water quality both in the reservoir and the pond by planting only those plants that fish eat, and regularly drain the water.
   e) Take very strong measures to stop the elephants trespassing into nearby plantations. In case of trespassing, suitable compensation should be paid to the landowner.
   f) Separate the rampaging elephants and the ones in musth. They need to be under control at all times. Clear notices in English and Thai should inform the tourists of the potential danger.

Preliminary cost estimation:

The construction of the Thai Elephant Centers in five areas will cost a total of 1 056 053 000 baht. This comprises 1 005 765 000 baht for the construction cost and growing elephant food and 50 288 000 baht for survey and design work.

Economic feasibility analysis:

To develop each Thai Elephant Conservation Center, a huge investment will be needed, but when the project is implemented it will greatly profit the economy.
1) The Thai Elephant Conservation Center, Lampang
   Using a discount rate of 12 percent, the net present value (NPV) is 139.86 million baht, the benefit cost ratio (B/C Ratio) is 1.38 and the economic internal rate of return (EIRR) is 16.85. Thus the project is economically feasible. In the worst case scenario, the cost will increase by 10 percent while the total benefit will be reduced by 10 percent. However, the project is still suitable for investment as it has a great chance of being successful.

2) The Thai Elephant Conservation Center, Surin
   Using a discount rate of 12 percent, the net present value (NPV) is 60.42 million baht, the benefit cost ratio (B/C Ratio) is 1.24 and the economic internal rate of return (EIRR) is 15.62. Thus is economically feasible. In the worst case scenario, the cost will increase by 10 percent while the total benefit will be reduced by 10 percent. However, the project is still suitable for investment as it has a great chance of being successful.

3) The Thai Elephant Conservation Center, Krabi
   Using a discount rate of 12 percent, the net present value (NPV) is 64.66 million baht, the benefit cost ratio (B/C Ratio) is 1.52 and the economic internal rate of return (EIRR) is 19.04. Thus the project is economically feasible. In the worst case scenario, the cost will increase by 10 percent while the total benefit will be reduced by 10 percent. However, the project is still suitable for investment as it has a great chance of being successful.

4) The Elephant Camp at Jed Kod Forest Plantation, Saraburi
   Using a discount rate of 12 percent, the net present value (NPV) is 48.58 million baht, the benefit cost ratio (B/C Ratio) is 1.56 and the economic internal rate of return (EIRR) is 19.18. Thus the project is economically feasible. In the worst case scenario, the cost will increase by 10 percent while the total benefit will be reduced by 10 percent. However, the project is still suitable for investment as it has a great chance of being successful.

5) The Elephant Camp at Thong Pha Phum Forest Plantation, Kanchanaburi
   Using a discount rate of 12 percent, the net present value (NPV) is 48.58 million baht, the benefit cost ratio (B/C Ratio) is 1.56 and the economic internal rate of return (EIRR) is 19.18. Thus the project is economically feasible. In the worst case scenario, the cost will increase by 10 percent while the total benefit will be reduced by 10 percent. However, the project is still suitable for investment as it has a great chance of being successful.

Administration of the Project:

Legally, the New World for Thai Elephants Foundation will have the status of a juridical person and can raise funds or receive donations for project implementation.

Project administration will be the main duty of the National Elephant Conservation Institute (NECI), which is a semi-autonomous body under the Ministry of Agriculture and Co-operatives approved by the Cabinet. At present, this institute is under the New World for Thai Elephants Foundation, operated by the Director-General under the control of the institute committee. The organization chart comprises four Deputy Director Generals, who are responsible for programme execution and management, technical subjects, fund raising and special activities, and the management of regional centers.

Recommendations

1. Change the legal status of the domesticated elephant from a transport animal (as defined by the Beast of Burden Act) to an animal “Reflecting the Unique Identity of Thailand”. This could help
to guarantee the quality of life of elephants in terms of prevention from cruelty and the standard of care.

2. Establish permanent and appropriate jobs for elephants and mahouts:
   2.1. Use five to ten elephants and mahouts in every national park (there are more than 150 parks in Thailand) for patrolling, transport and tourist services.
   2.2. Set up new elephant-related ecotourism sites in:
       • FIO forest plantations
       • Provincial public areas
       • Regional Thai Elephant Conservation Centers.

3. Establish quality standards for elephant and mahouts working in the tourism industry by:
   3.1. Creating an elephant and mahout training school in each region. Make the TECC a center for training and certify both elephants’ and mahouts’ qualifications.
   3.2. Setting up an Identification Card system for elephants and mahouts in each field of work.

4. Negotiate with tourism organizations and fix appropriate income and working hours for elephants and mahouts.

5. The government should support elephant conservation activities. In particular elephants that are less capable of working or are disabled should be helped by government support for the establishment of a nursing center in each regional TECC.

6. Promote and protect the traditional mahout ways-of-life, especially those of the Swe people in Surin province and other major elephant men. This will benefit elephant-related ecotourism.

7. Set up a specific institution for elephant medical care, research and development and establish proper living standards for the elephants at the veterinarian school.