

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Seventieth meeting of the Standing Committee
Rosa Khutor, Sochi (Russian Federation), 1-5 October 2018

Species specific matters

ASIAN ELEPHANTS (*ELEPHAS MAXIMUS*)

1. This information document has been prepared by the Secretariat in relation to agenda item 49.1.

Background

2. At its 17th meeting (Johannesburg, 2016), the CITES Conference of the Parties adopted Decisions 17.217 and 17.218, on *Asian elephants* (*Elephas maximus*), as follows:

Directed to the Parties

17.217 *All Parties involved in the trade in live Asian elephants are encouraged to:*

- a) *undertake, as necessary, investigations into the illegal trade in live Asian elephants, and endeavour to enforce, and where necessary improve, national laws concerning international trade in specimens of Asian elephants with the explicit intention of preventing the illegal trade in live Asian elephants;*
- b) *develop strategies to manage captive Asian elephant populations;*
- c) *ensure that trade in, and cross-border movements of live Asian elephants are conducted in compliance with CITES, including the provisions in Article III, paragraph 3, for Asian elephants of wild origin;*
- d) *collaborate in the development and application of a regional system for registering, marking and tracing live Asian elephants, requesting as necessary assistance from experts, specialized agencies or the Secretariat; and*
- e) *at the request of the Secretariat, provide information on the implementation of this Decision for reporting by the Secretariat to the Standing Committee.*

Directed to the Secretariat:

17.218 *The Secretariat shall:*

- a) *upon request and pending the availability of external funding, assist the range States of Asian elephants in their implementation of Decision 17.217; and*
- b) *incorporate information provided by range States in accordance with Decision 17.217, paragraph e), together with other findings and recommendations concerning trade in live Asian elephants as appropriate, into its regular reporting to the Standing Committee on the implementation of Resolution Conf. 10.10 (Rev. CoP17) on Trade in elephant specimens.*

- With reference to Decision 17.217, paragraphs b) and d), the Secretariat conducted in-house research¹ in close collaboration with Asian elephant range States, experts and related NGOs to collate information on existing strategies to manage captive Asian elephant populations and on the development and application of a regional system for registering, marking and tracing live specimens of Asian elephant. Aiming to inform Parties, the following sections of this document present the methods, findings and considerations resulting from this in-house research. Complementary information is presented in Annex I (AsESG guidelines for registration of captive Asian elephants) and in Annex II (AsESG guidelines for captive Asian elephant management).

Methodology

- For the purposes of paragraph 3 above, the Secretariat developed and deployed a survey to collect information on i) strategies to manage captive Asian elephant populations, and on ii) the development and application of a regional system for registering, marking and tracing live Asian elephants. All 13 Asian elephant range States² were invited to take part in this survey, and experts³ in Asian elephants and related NGOs were invited to take part in its part ii).
- A total of seven⁴ Asian elephant range States, seven experts and six NGOs took part in the survey. The Secretariat would like to express its gratitude to all of these participants.
- To complement the information collected via the survey deployed, the Secretariat also conducted a literature review⁵ to obtain further information on management strategies for captive Asian elephants and on registering, marking and tracing systems for these.

Results and Discussion

Concerning Decision 17.217, paragraph b) on the development of strategies to manage captive Asian elephant populations

- Table 1 (see below) summarizes the information collated via the surveys to range States and literature review on strategies to manage captive Asian elephant populations.

Table 1 - Management strategies for captive Asian elephants in range States.

Asian elephants range States	Information collected
Bangladesh	<p><u>Information collated via survey:</u></p> <ul style="list-style-type: none"> Recently, Bangladesh introduced and disseminated a new strategy for the registration of captive elephants (Deer and Elephant Rearing Rule, 2017). While this measure has been widely disseminated, it has not been successfully implemented: as of July 1st, 2018, no registrations of captive elephants had been made despite the 100 captive Asian elephants present in the country.

¹ This research was made possible thanks to an intern working at the Secretariat's Scientific Services Team.

² Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand and Viet Nam.

³ Veterinarians, researchers, experts in the technical fields of registering and/or marking.

⁴ Bangladesh, China, Lao PDR, Myanmar, Nepal, Thailand and Viet Nam.

⁵ The main sources consulted included the following:

AsERSM (2006). Report of the Asian Elephant Range States Meeting, January 2006, Kuala Lumpur (Malaysia). IUCN SSC. Retrieved September 24, 2018, from <https://www.fws.gov/international/pdf/report-asian-elephant-range-states-meeting-2006.pdf>.

AsERSM (2017). Final report of the Asian Elephant Range States Meeting, April 2017, Jakarta (Indonesia). IUCN SSC. Retrieved September 24, 2018, from https://www.fws.gov/International/pdf/AsERSM%202017_Final%20Report.pdf.

CITES Secretariat (2017). Status of Elephant populations, levels of illegal killing and the trade in ivory: A Report to the CITES Standing Committee. SC69 Doc. 51.1, Annex. Retrieved September 24, 2018, from <https://cites.org/sites/default/files/eng/com/sc/69/E-SC69-51-01-A.pdf>.

	<ul style="list-style-type: none"> • In Bangladesh, elephants are mainly used for wood siding. Some individuals are owned by the Government, but all others are privately owned. It was noted that "rearing captive elephants is nowadays no longer financially worthwhile". • The Bangladesh Elephant Conservation Action Plan is currently underway.
Bhutan	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • Bhutan holds the smallest population of captive Asian elephants (n=9) amongst range States. These are owned by the Department of Forests and Park Services (Ministry of Agriculture) and are mainly used for patrolling purposes during the monsoon season. No specimens are privately owned, as the species is protected. • Elephants are listed on the Forest and Nature Conservation Act (1995), being granted with the highest level of protection. It is expected that this Act will be revised, and that violators of the law on the protection of elephants will be fined or imprisoned. • At present, the main concern regarding the management of the captive elephant population in the country is the absence of a veterinary practitioner, an adapted veterinary program, as well as of training for mahouts.
Cambodia	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • Cambodia's captive elephant population consists of approximately 70 individuals, mostly held by private owners. No wild elephants can be captured, and there are no breeding facilities. • In recent years, the Government has been preparing the Asian Elephant Action Plan (2016-2026) in collaboration with the Forestry Administration and the Ministry of Environment. This Action Plan will be shared with the CITES Secretariat once it becomes available. • Currently, the main concerns regarding the national captive population are the lack of resources and adequate regulations, and the risk of disease transmission.
China	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • In China, a total of 243 captive elephants (Asian and African) are held by zoos (specimens are owned by the Government) and circuses (specimens are privately owned). • China has taken several steps to address the management of its captive elephants: <ul style="list-style-type: none"> ▪ It is now forbidden to capture wild Asian elephants and keep them in zoos. There are currently very few wild Asian elephants in China, hence any specimens destined to captivity must now be sourced from other range States, or from captive elephant farms. ▪ Each trade transaction must follow the CITES rules and the legislation in place in the relevant countries. ▪ Establishments holding a captive elephant farm require prior approval from the State Forestry Administration. Before issuing licenses to import or breed elephants in captivity, the breeding establishment, its location and rearing conditions will be inspected to determine their suitability. ▪ Official inspections of farmed elephants will be organized by the Management Authority of Wildlife, the Chinese Association of Zoological Gardens and the CITES Management Authority in China. These inspections will take place yearly to verify the animals' accommodation and breeding condition. ▪ China has put in place strict measures concerning the protection of wild elephant populations, their zoo exhibits and captive breeding. It will continue to implement these measures in cooperation with the relevant authorities.
India	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • The estimated 3467-3667 (error margin due to undeclared owners) Asian elephants found in captivity in India belong to the Forest Department, who use them for patrolling, conflict management and tourism; and to private owners, who use them for socio-economic status establishment and for work. Elephants are also found in zoos and temples. • The State Forest Departments, under the Ministry of Environment, Forest and Climate Change, are responsible for the management of these elephants. The trade in elephants between states requires the issuing of a special permit. Certificates for private owners are issued by the State Chief Wildlife Wardens and are essential for owning an elephant. • The Wildlife Protection Act of 1972 grants elephants the highest level of protection. No distinction is made between captive elephants and wild elephants. • In 2008, India developed a guide on the Management of Captive Elephants. • The main issue regarding captive elephants in India is the poor compliance with registration by private owners. Moreover, there is insufficient follow-up of these cases, particularly regarding the welfare of the animals and changes in ownership.
Indonesia	

	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • In 2017, there were 467 captive Asian elephants in the country. However, the population is believed to have been declining in recent years. • Captive Asian elephants in Indonesia are mainly used for research, education, public presentations, patrols, tourism, and reproduction. They are managed by the Directorate General of Natural Resources and Ecosystems Conservation (KSDAE), overseen by the Ministry of Environment and Forests. Only the Government manages these animals, as it is not possible to own them privately. However, elephants may be lent to various institutions (i.e. zoos) within and outside of the country. • One of Indonesia's current concerns regarding its captive population is the endothelial herpesvirus (EEV), which affects young individuals and is often lethal.
Lao PDR	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • Lao PDR put in place The Wildlife and Aquatic Law (07/ NA 2007) under which Asian elephants are covered by the Prohibition Category List I under the Decision of the Prime Minister N ° 81/2008. Under this category, species are considered rare, close to extinction, of high value, and of high importance in socio-economic, environmental, educational and scientific development. • In September 2017, the Governor issued Agreement No. 979 concerning the management, use and conservation of domesticated elephants in the province of Xayabouly. Under this Agreement, management includes registration of all domestic elephants in the province. • There is little reproduction of Asian elephants in Lao PDR, hence the population is declining. Elephant owners generally possess only one individual, further limiting mating opportunities. Individuals are used for work, tourism and entertainment. While the health of these elephants is typically poorly monitored, the association ElefantAsia, which works with the Government, has enabled the establishment of a mobile veterinary unit to provide assistance to animals working in remote areas⁶.
Malaysia (Peninsular Malaysia and Sabah)	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • Malaysia aims to ensure that all elephants are obtained from legal sources and its zoos must comply with the Wildlife Conservation Regulations 2012 and the Wildlife Conservation Regulation 2013. <p><i>Peninsular Malaysia</i></p> <ul style="list-style-type: none"> • The captive population of Peninsular Malaysia consists of 65 individuals distributed amongst zoos, private owners, and Government's sanctuaries. The latter holds 53% of the country's captive elephants. • Peninsular Malaysia developed and implemented the 2013 National Elephant Conservation Action Plan (NECAP) for a more comprehensive and holistic approach towards elephant conservation. • Peninsular Malaysia also strengthened science-based management approaches by working with the Management and Ecology of Malaysian Elephants (MEME) Project. This collaborative research project between the Department of Wildlife and National Parks Peninsular Malaysia (DWNP) and the University of Nottingham Malaysia Campus (UNMC) was developed in 2013 to assess the effectiveness of the current elephant management strategies and produce a scientifically sound elephant conservation strategy based on the understanding of elephant ecology and behavior, as well as of the human dimensions of human-elephant conflict. <p><i>Sabah</i></p> <ul style="list-style-type: none"> • There are approximately 20 captive elephants in Sabah. • The Sabah Elephant Conservation Action Plan (2012-2016) has been developed to undertake conservation initiatives in the region and was undergoing updating in 2017. • The main challenge concerning captive elephants relates to the lack of qualified mahouts, limited breeding space, cost of fodder, management of bulls in musth, and the emergence of diseases due to the costs of medication.
Myanmar	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • The captive elephant population in Myanmar is the largest out of the 13 range States, consisting of approximately 5,600 individuals (many of which are unregistered). These elephants are held almost equally between Myanmar Timber Enterprise (2945) and private landowners (2561). The Forest Department holds approximately 128 individuals. The

⁶ ElefantAsia (2008). *Lao Captive Elephant Care & Management Programme, Final report*. ElefantAsia non-profit organization. Retrieved September 24, 2018, from <https://elephantconservation.org/lao-captive-elephant-care-management-programme/>.

	<p>elephants are used for the extraction of wood, trekking, heavy work, transport, tourism, entertainment, etc.</p> <ul style="list-style-type: none"> • It is the Department of Forests, foreseen by the Ministry of Natural Resources, Conservation and Environment, that manages captive elephants populations in Myanmar. • Historically and culturally, Myanmar has allowed the private possession of elephants, which is prohibited in the Wildlife Law. • Myanmar is considering a project for re-wilding its elephants. • In April 2018, Myanmar published the Myanmar Elephant Conservation Action Plan (2018-2027) that sets out an elephant conservation strategy for the country for the next 10 years. The Plan addresses the protection of Myanmar's wild elephants and their habitat, human-elephant conflict management, combating illegal trade in elephants and their parts, and the management of captive elephants and their interaction with wild elephants.
Nepal	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • Nepal has a population of approximately 200 captive elephants, although some believe it is larger. They are owned by both the Government and by private owners. The Government is responsible for regulating and ensuring compliance with regulations on the management of Asian elephants. Private owners are responsible for the well-being of their animals. • Elephants in Nepal are used for tourism purposes in National Parks (this is the use given to most of the specimens privately owned), for poaching patrols, scientific research, environmental monitoring and zoo entertainment. • Harvesting wild elephants has been prohibited for many years, hence, captive elephants in Nepal are sourced (often illegally) from India. • The Department of National Parks and Wildlife Conservation, under the Ministry of Forest and Soil Conservation, is responsible for the management of captive and wild elephant populations in Nepal. Elephants in Nepal are protected by the 1973 National Parks and Wildlife Conservation Act. While there is national legislation focusing on elephants, means are insufficient to adequately enforce it. • The Elephant Conservation Action Plan: 2009-2018 is currently being implemented in Nepal, and a study on captive elephants is planned for 2019.
Sri Lanka	<p><u>Information collated via literature review:</u></p> <ul style="list-style-type: none"> • The approximately 230-250 captive elephants legally registered in Sri Lanka are privately owned. Generally, these elephants are used in temples, presentations, tourism, and to a lesser extent they are also used for work. More rarely, some owners keep elephants as social status symbols. • The Department of Wildlife Conservation under the Ministry of Sustainable Development and Wildlife manages the captive and wild elephants in Sri Lanka. Private ownership of an elephant is allowed if a permit is obtained from the Department of Wildlife Conservation.
Thailand	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • Of the 3783 captive elephants reported to exist in Thailand in 2017, 95% of them are privately owned, including by ethnic groups who regularly cross the border between Thailand and Myanmar with the animals. It is hard to accurately estimate the number of captive individuals, as they are often not registered. • Captive elephants are mainly used for tourism, trekking and shows. The number of elephant camps may vary according to season and demand, but an estimate would suggest approximately 200 camps in the country. When not being used for work and tourism, elephants may be used in other activities in Thailand or in neighboring countries, or held chained in the forest. • The National Master Plan for Elephant Conservation was revised in 2016 and is to be updated into a new document entitled National Master Plan for Elephant Conservation 2018-2037. This plan aims to ensure the conservation and sustainable management of elephants (captive and wild) and their habitats. Thailand also has a specific Elephant Action Plan for some forest areas. • The Department of Livestock Development (DLD) is the body responsible for the health of the animals, their movements and the permission for their trade under the Animal Epidemics Act 1956 (B.E.2499).
Viet Nam	<p><u>Information collated via survey and literature review:</u></p> <ul style="list-style-type: none"> • Of the 88 captive elephants in Viet Nam, most are owned by zoos or used for tourism purposes. Private ownership is also possible. Some individuals belong to ethnic groups that have traditionally possessed elephants. No elephants are used for work.

	<ul style="list-style-type: none"> • The Ministry of Agriculture and Rural Development (MARD) is responsible for managing the captive elephant population and the Animal Welfare Act enables the Criminal Court to issue strong sentences for those who mistreat elephants. • A national priority campaign for the protection and conservation of elephants and tigers has been launched for the period 2015-2020. • One of the main concerns regarding the captive population is the limited reproduction capacity of aging individuals. Also, these animals are often kept in an unhealthy condition, including in isolation.
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- Through the surveys deployed by the Secretariat, it became clear that there is some confusion among range States regarding the concept of 'captive elephant'. A possible definition⁷ for the term refers to animals in direct human care and control. While some Parties (e.g. Thailand), consider their elephants to be 'domesticated' and not 'captive', it is relevant to note that such duality may have implications on the species' management.
- While strengthening legislation for managing captive Asian elephants in range States is essential, this may have consequences for captive populations in neighboring countries. Such potential effects must thus be accounted for when attempting to improve national legislation for the protection of these species.
- Through the surveys deployed, range States recurrently noted the lack of suitable infrastructure, staff and veterinary follow-up for ensuring appropriate management of their captive Asian elephants. However, caring for the captive individuals' biological needs (adapted feeding, housing, care) and determining their health status are key points in good management practice.
- To compensate for the out-phasing of the harvest of wild specimens, breeding centers for Asian elephants have emerged in some countries (e.g. China). While captive breeding programmes have the potential to avoid the need to harvest wild specimens, it is important to ensure that these programs are genetically, scientifically and economically relevant to conservation policies.

Concerning Decision 17.217, paragraph d) regarding the development and application of a regional system for registering, marking and tracing live Asian elephants

- Table 2 (see below) summarizes the information collated from literature and through surveys regarding the development and application of systems for registering, marking and tracing live Asian elephants.

Table 2 - Registering, marking and tracing systems for live Asian elephants used in range States.

Asian elephant range States	Information collected
Bangladesh	<ul style="list-style-type: none"> • Typically, elephant owners must register their elephants on a yearly basis, as well as report other relevant information (including birth and death) to the Bangladesh Forest Department. Owners must place ear tags on each elephant. • Prior to any certificates of registration being issued, the administrative officers of the Bangladesh Forest Department will visit the establishment to ensure that they meet the necessary criteria.
Bhutan	<ul style="list-style-type: none"> • There is no formal system in place for the registration of captive elephants. However, each captive elephant has a health booklet carrying individual information. • There are no noted concerns regarding the registration and monitoring of Bhutan's captive population.
Cambodia	<ul style="list-style-type: none"> • There is no registration system for captive elephants, and thus there is no monitoring of any transfers or exchanges of elephants between owners.

⁷ As per IUCN/SSC Asian Elephant Specialist Group (not dated). Draft Position Statement on Captive Asian Elephants. Retrieved September 24, 2018, from <http://www.asesg.org/PDFfiles/asesg-Draft%20Position%20Statement%20on%20Captive%20Asian%20Elephants.pdf>.

China	<ul style="list-style-type: none"> • As of 2018, all captive elephants carry an electronic transponder (implanted via subcutaneous injection performed by veterinarians). Animals are identified and traced by the transponder, with any movement, birth or death being registered. These transponders are managed by the "China Wildlife Mark Center"⁸. • It appears that in 2017 the registration of an animal and its identification with a microchip were mainly done on a voluntary basis. • Two agencies manage animal registrations: the licensing SFA and the Association of Zoos/ Ministry of Construction, which holds a database and also manages captive elephant farms.
India	<ul style="list-style-type: none"> • Approximately half of the Government's captive elephants are registered and identified with electronic chips. One of the major difficulties is achieving the registration of all captive elephants by all private owners. • State Forest Department (SFD) elephants (old or newly captured) are registered and given a booklet. Almost all of these elephants have a microchip. The Central Zoo Authority (CZA) requests that all zoo elephants be microchipped, and the SFD requests that all zoos and circuses have a certificate.
Indonesia	<ul style="list-style-type: none"> • There is an official registration system and many elephants possess electronic chips. A studbook for captive elephants is held by Taman Safari Indonesia. New system entries are verified by the BKSDA (Nature Conservation Agency), but changes in ownership are not regularly registered. This system seems to follow satisfactorily the movement of the registered animals.
Lao PDR	<ul style="list-style-type: none"> • The Department of Livestock and Fisheries has developed a registration system in which old and new elephants must be registered. A microchip is implanted in all legally registered elephants, which are provided with specific documentation.
Malaysia (Peninsular Malaysia)	<ul style="list-style-type: none"> • A National Elephant Conservation Action Plan (2013) has been put in place in 2013. • The management and accountability of captive elephants is undertaken by the Department of Wildlife and National Parks (DWNP), which has developed a registration system in which each elephant is tagged with an electronic chip.
Myanmar	<ul style="list-style-type: none"> • Registration for all captive (or domesticated) elephants is compulsory at the Forest Department, whether owned privately or by the Government. The recording system includes specific information about each listed elephant, as well as photographic identification. Annual re-registration is mandatory. It appears that there are between 300 and 500 unregistered captive elephants in Myanmar. • For elephants belonging to the Forest Department and Myanmar Timber Enterprise, there is a marking system that involves marking via skin burn performed by a veterinarian.
Nepal	<ul style="list-style-type: none"> • Electronic chips are implanted after birth by a governmental veterinarian. Approximately 50% of elephants were identified via this method in 2016. • Nepal is ready to adopt a tagging system for all Asian elephants, including Government owned individuals. It is currently working on amending its captive elephant management policy and trying to address in it registration and tagging systems. • New owners must register their elephants in the National Park where they occur. However, this is not always undertaken.
Sri Lanka	<ul style="list-style-type: none"> • A registration system developed in 1991 by the Department of Wildlife Conservation follows strict procedures and is guided by the Fauna and Flora Protection Ordinance (1991) and the Registration and Licensing section of Tuskers and Elephant Regulations (1991). • When applying for registration, applicants must submit photos and other documentation attesting its source and ownership. An audit must be carried out by a committee appointed by the Director General of the Department of Wildlife Conservation prior to any certificate being issued. Although the system was successful at the beginning, frauds have weakened it.

⁸ China Wildlife Mark Center, <http://www.cnwm.org.cn>.

Thailand	<ul style="list-style-type: none"> • After the age of eight, elephants must be registered, have an electronic chip implanted, and receive a certificate that will include the chip number and a photographic record. • The Department of Provincial Administration (DOPA) under the Ministry of the Interior is the responsible body for elephant registration, although it is the Department of Livestock Development who implants the electronic chips. • Thailand is also developing a DNA database for its captive elephants. In 2016, 2000 samples from captive elephants had been analyzed. It is expected that information on the DNA profile of individuals will be included in their official documentation.
Viet Nam	<ul style="list-style-type: none"> • Viet Nam has just set up a pilot program which has microchipped 45 (out of 88) captive Asian elephants held in Elephant Conservation Centers in the central part of the country. Subject to available funds, the country aims to apply this identification system to all of its captive specimens. • Each province has a registration system that records several biometric parameters of registered elephants.

13. Table 3 (see below) summarizes the information collated via surveys to Asian elephant range States, experts and related NGOs, and via literature review on existing registering, marking and tracing systems that can be applied to Asian elephants and provides insights into their feasibility, reliability and cost-effectiveness.

Table 3 - Comparison of different registering, marking and tracing systems applicable to captive Asian elephants.

MARKING SYSTEMS		COST	REQUIREMENTS	ADVANTAGES	DISADVANTAGES	REGISTERING SYSTEM	COMMENTS
Microchips or Electronic Tag	Typically implanted in the neck	Cheap (possibly between 5-10 USD per microchip)	<ul style="list-style-type: none"> -Veterinarians select the right body part and inject the subdermal microchip -Microchips can be read approximately at 20 cm distance -Those verifying identification need microchip readers and to know how to search for the chips 	<ul style="list-style-type: none"> -Cheap and easy to perform -The implanted device is small -It does not harm the animal 	<ul style="list-style-type: none"> -Necessary to possess microchip readers, which are not always available in the field -The microchip may migrate (up to 10 cm around the injection spot) -Application needs to be performed officially by a veterinarian in some countries -The microchip can be removed and placed on a different animal 	<p><i>European Zoos:</i></p> <ul style="list-style-type: none"> -Until now: special paper document (Cerfa) archived at zoos -In future: a national software for non-domestic species (http://www.i-fap.fr/) <p><i>Elsewhere:</i> paper and/or digital</p>	<ul style="list-style-type: none"> -Zoos use it for individual identification and for studbooks. -Are the most commonly used system in range States.
	Micro-Satellites or Single nucleotide polymorphism (SNP)	Quite expensive (possibly between 10 USD and 100-150 USD per analysed sample)	<p><u>In the field:</u></p> <ul style="list-style-type: none"> -Samples must contain DNA material (e.g. saliva, blood, skin, hair, etc.) -Sample collection must be performed by a veterinarian or a veterinary/lab technician -Requires special shipment to the laboratory <p><u>In the laboratory:</u></p> <ul style="list-style-type: none"> -The facility should be able to perform DNA analysis -Calibration is important 	<ul style="list-style-type: none"> -Allows identification of the animal with certainty -Is an excellent technique for detecting wildlife crime and ivory trade (legal vs. illegal) 	<ul style="list-style-type: none"> -Is expensive -May take long to obtain results, making it challenging to apply in routine controls in the field -Requires special shipping to a laboratory (specific temperature, materials, housing, etc.) -Requires a laboratory that can perform the necessary analysis -Depending on the DNA method applied, the data may be more or less difficult to read 	Digital	<ul style="list-style-type: none"> -This is not a “marking” system <i>per se</i>, as it does not “mark” the animal. However, it can be used to identify individuals with precision. -This technique could be coupled with another one to compensate for a lower reliability.
Branding	Tail, Skin, Ear, etc.	Cheap	<ul style="list-style-type: none"> -Requires special skills to be well performed and avoid unnecessary harm to the animal -Animals must be calm and held down -Use of a caustic paste by the veterinarian 	<ul style="list-style-type: none"> -Branding is for life and irreversible -Easily seen and identified by anyone without specialized skills 	<ul style="list-style-type: none"> -Involves mutilation and thus welfare issues -Veterinarian needed: drugs could be used for light sedation or tranquilization, and against pain (local analgesia) 	Paper or digital	<p>Animal welfare issues could be prevented by adequate veterinary care and trained staff to keep the animal calm.</p>

					-In hot, humid climates, risk of infection is high		
Tattoo	Tail, Skin, Ear...	Cheap	-Requires special skills to be well performed and avoid unnecessary harm to the animal. -Animals must be calm and held down -Requires good quality ink	-The tattoo is easy to perform -It is easily seen	Tattoos may be removed or fade with time.	Paper or digital	
Photography	Whole animal (front + two sides + rear)	Price of a camera, computer, other material	-Good photo quality -Good observant skills to identify unique markings	-Cheap and easy -Every animal has natural individual marks and scars	-Harder to use for young individuals because their morphology may still change significantly -Individual differences may be hard to identify in photographs -Imagery database must be easily accessible	-Studbook -Paper or digital	-Every elephant is different -Has many limitations
Ear tag	Ear	Cheap	Special ear clamp	Easily seen	- Not aesthetical - Easily removed (by ear movement, other elephants or by someone)	Paper or digital	Not very reliable
Collar or leg bracelet	Neck Leg	The price of a special collar or a special bracelet	No specialized skills required	Easy to place	- Easy to remove - May injure the animal on the long term if proper care is not provided	Paper or digital	- Generally used for scientific surveys - Not commonly used - May injure the animal (wounds, abscesses)

14. Considering the information presented in Table 2 and Table 3 regarding different registering, marking and tracing systems applicable to captive Asian elephants, immediate harmonization of the systems used amongst range States seems challenging, particularly due to existing financial, human and material resource constraints.

Considerations

15. Based on the information presented above, consideration could be given to the following:

Concerning the management of captive Asian elephants at national level, range States could consider

- a) Developing long-term national strategies and policies for the management of captive elephant populations, including the development of management standards for captive Asian elephants and respective indicators. Management standards could include inter alia guidelines on care, housing, diet, and social and behavioral requirements, and be made publicly available. Management indicators could be, for example, based on birth/death rates, and animal health condition and behaviour. For the latter, consideration should be given to the AsESG guidelines for captive Asian elephant management (presented in Annex II).
- b) Ensuring that adequate veterinary facilities for pachyderms exist, and that appropriate care is available for all captive Asian elephants.
- c) Encouraging the adoption of best management practices by Asian elephant holders and ensuring regular follow-up and monitoring (including of health, overall welfare and ethics aspects) of privately owned elephants.
- d) Developing targeted training for individuals caring for Asian elephants, focusing particularly on the biological, ecological and social requirements.
- e) Cooperating with other range States of Asian elephants to ensure that national regulations on Asian elephants do not compromise neighbouring captive populations.
- f) Granting permission for keeping Asian elephants only when the establishments and conditions in which the animals will be kept meet welfare criteria established in terms of paragraphs a), b) and c).
- g) Assessing the status of captive Asian elephant populations in their range States (including their reproductive and genetic potential) and, to that end, consider engaging with external entities (e.g. experts or NGOs) when national capacity is a constraint.

Concerning the registering, marking and tracing of live Asian elephants, range States could consider:

- a) Establishing nation-wide standardized registering, marking and tracing systems for managing captive Asian elephant populations, taking into consideration the assessment contained in Table 3.
- b) Adopting similar systems, whenever possible, to meet cost-effectiveness, feasibility and reliability criteria and exchange of information.
- c) Ensuring that all captive Asian elephants are numbered, registered and tagged.

AsESG guidelines for registration of captive Asian elephants⁹

AsESG guidelines for registration of captive Asian elephants The AsESG considers the registration of all captive Asian elephants necessary to facilitate monitoring and management of captive elephant populations, and to help curtail the illegal trade in elephants and their body parts (including ivory) and the capture of wild elephants.

- Registration of captive Asian elephants should primarily involve the use of a simple standardized database that includes basic biological information on each individual elephant (e.g. gender, approximate age, place of origin, estimated height, estimated weight, distinguishing characteristics, any reproductive information, etc). If the elephant is captive born, parentage information must be recorded at the time of registration. The database should also include basic information about the use of the elephant, elephant owner(s) information, and location (current and previous) of the elephant;
- This registration database should be able to be readily accessed and analyzed – both within and across range countries – and personnel training should be provided in database management and analysis;
- Registration should also include the use of photographs and/or microchips and/or other tamper-proof marks (e.g. brand, tattoo) to help positively identify each individual elephant;
- It is recommended that an elephant be registered, and tagged if a form of identification such as a microchip is used, no later than 6 months after birth or after capture;
- Where photographs are used, it is important to have several different views of the individual elephant, and it is suggested that ear confirmation, shape of the dorsal portion, and shape of the head in old animals be considered. Young animals should be photographed at regular yearly intervals to maintain an accurate record;
- Where microchips or other forms of tamper-proof identification marks are used, there is a need to standardize systems of use and provide training across range countries.
- The AsESG is available as a resource to advise on the development of captive Asian elephant registration and identification programs.

⁹ IUCN/SSC Asian Elephant Specialist Group (not dated). *Draft Position Statement on Captive Asian Elephants*. Retrieved September 24, 2018, from <http://www.asesg.org/PDFfiles/asesg-Draft%20Position%20Statement%20on%20Captive%20Asian%20Elephants.pdf>.

AsESG guidelines for captive Asian elephant management¹⁰

These AsESG guidelines can assist in the development of captive elephant management standards, and are intended to be re-evaluated and updated as elephant management practices progress. A guiding principle in captive elephant management should be the avoidance of physical or psychological harm to the individual elephant.

Proper Elephant Housing and Husbandry:

- Provides adequate shelter; exercise areas with adequate monitoring or fencing to prevent animals from straying and to prevent unwanted access by public; and access to natural substrate such as dirt;
- Elephant housing location kept clean at all times; fresh drinking water provided daily; good quality and appropriate fodder and any needed supplements provided daily; program of pest control and prevention;
- Elephants should not be housed alone and should have access to other elephants and opportunities for natural social interaction;
- Managing social groupings include: being aware of social compatibility, dominance hierarchies, and being able to deal with new animal introductions and separation;
- Daily bathing (skin care) provided; regular exam of all body parts; weight and height of the elephant measured regularly;
- Ability to treat and medicate elephants anytime necessary, and take samples from elephants (blood, urine, feces, trunk wash); ability to manage elephants in an emergency medical situation (separation) and if there is aggression to another elephant or to a human;
- Where chaining, or other types of tethering, is used it should allow adequate movement and, where possible, social interaction. Types of restraints designed to cause physical harm if the elephant exerts any force against them should not be used. Continuous tethering should be limited, every effort should be made to provide elephants with time off tethers;
- Elephants performing work should be allowed periods of rest in a sheltered area where they can comfortably move around and lie down at will.

Elephant Management Protocol:

- Outlines the elephant management program goals, management policies and emergency response;
- Defines responsibilities for all staff involved in the elephant management program; guidelines for all elephant management and handling activities.

Responsibility of Elephant Care Staff:

- Should continually build the capacity to improve elephant care and humane handling practices and skills; should be knowledgeable about proper and humane use of all training and management tools; share information and experiences with other elephant care staff.

Responsibility of Elephant Facility Administrators:

- Understand the ethical and financial commitment necessary to maintain elephants, from animal welfare to conservation issues;
- Provide a proper number of qualified elephant care staff and understand the level of staff expertise necessary for an effective program; support ongoing education of elephant care staff;
- Provide and support responsible program of veterinary care;
- Understand and communicate how the goals of the facility and of the elephant program dictate implementation of elephant management strategies.

Considerations for Public Education:

- Make available up-to-date educational signs and display information about elephants; where possible offer educational presentations, talks or demonstrations by elephant managers and staff, and an elephant conservation message.

Elephant Studies and Conservation Goals:

- When possible take advantage of new study opportunities;

¹⁰ IUCN/SSC Asian Elephant Specialist Group (not dated). Draft Position Statement on Captive Asian Elephants. Retrieved September 24, 2018, from <http://www.asesg.org/PDFfiles/asesg-Draft%20Position%20Statement%20on%20Captive%20Asian%20Elephants.pdf>.

- Involvement in elephant studies in the following areas to benefit conservation and/or animal welfare strategies is suggested:
 - Physiological
 - Behavioral
 - Communication
- Support efforts to benefit Asian elephant populations by raising awareness of, helping support, and, where possible, funding conservation activities.