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THREATS AND REGULATORY PROTECTION OF ASIAN ELEPHANTS IN PENINSULAR MALAYSIA

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By

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THREATS AND REGULATORY PROTECTION OF ASIAN ELEPHANTS IN PENINSULAR MALAYSIA

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June 2016

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Asian elephants have been categorised as "endangered" in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species 2015 and Appendix I of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As Malaysia is one of the Asian elephant range states, it is imperative to investigate the main threats to Asian elephants. Furthermore, the ratification of CITES and Convention on Biological Diversity (CBD) in 1975 and 1992 respectively targets conservation of biodiversity with more than 100 signatories, including Malaysia. Yet, few studies related are known. Hence, this study uses data to analyse the main threats, as well as the extent of legislation addressing them. The study also identifies CBD and CITES obligations related to Asian elephant conservation; Wildlife Conservation Act 2010 (WCA) was analysed against the CBD obligations and International Trade in Endangered Species Act 2008 (INTESA) was examined against CITES obligations. Primary data from interviews and secondary data were gathered and analysed with inductive and deductive thematic content analysis. The results reveal that human-elephant conflict (HEC), land use change and poaching are three main threats to Asian elephants. The conversion of forests into plantations and human-dominated areas are the causes of HEC and land use change. Given that land use change has reduced elephant habitats, farmers suffer in HEC (eg. crop loss, property damages, human injuries and deaths). HEC also leads to retaliatory killing and intolerable coexistence between elephant and human. Meanwhile, the high demand and monetary return from ivory trade, including poverty and corruption, are the causes of poaching, which ultimately skew the sex ratio between male and female elephants. WCA regulates elephants' trade, poaching, possession and breeding through license, permit and special permit while INTESA monitors elephants' trade, captive breeding and transit, with permit, certificate and registration. WCA also monitors elephant habitats and HEC by gazetting protected areas (PAs) and HEC mitigation measures respectively. Nevertheless, the amount of fine and period of imprisonment imposed to offences involving elephants bred in captivity are less compared to similar offences involving wild elephants. Hence, INTESA imposes higher fine and period of imprisonment to such offences. In addition, the CBD obligations related to Asian elephant conservation covers protection and conservation of elephant habitats and its genetic resources;

sustainable use of biodiversity; the access to and benefits sharing from utilisation of elephant's genetic resources; and the access to and transfer of technology. Generally, WCA addresses the CBD obligations through similar regulations addressing habitat loss and HEC. However, WCA does not regulate the access to and transfer of technology. Besides that, CITES obligates trade regulation of species in Appendix I;

form of permit and certificate; and measures to be taken by parties. Permit to elephant trade and captive breeding for commercial purposes will only be approved if trade is not detrimental and for non-commercial purposes. However, INTESA permits captive breeding for commercial purposes and import permit is not compulsory for export and re-export. Appropriate treatment should be given to living elephants in trade, but INTESA only obligates adequate care of imported and captivated elephants in Malaysia. To this end, the main threats to Asian elephants and the compliance of Malaysian legislation to international environmental conventions are addressed. However, legislation revisions and amendments are needed.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Master Sains

ANCAMAN DAN PERLINDUNGAN KAWAL SELIA GAJAH ASIA DI SEMENANJUNG MALAYSIA

Oleh

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Jun 2016

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Gajah Asia telah dikategorikan sebagai "terancam" dalam Senarai Merah Kesatuan Antarabangsa bagi Pemuliharaan Alam Semula Jadi (IUCN) untuk Spesies Terancam Versi 2015 dan Lampiran I dalam Konvensyen Perdagangan Antarabangsa Spesies Fauna dan Flora Terancam (CITES). Malaysia merupakan salah sebuah habitat Gajah Asia, maka kajian mengenai punca-punca utama yang mengancam Gajah Asia di Semenanjung Malaysia amat penting. Tambahan pula, penguatkuasaan CITES dan Konvensyen Kepelbagaian Biologi (CBD) bertujuan untuk memelihara kepelbagaian biologi telah ditandatangani lebih daripada 100 buah negara, termasuk Malaysia. Namun, hanya sedikit sahaja penyelidikan telah dilakukan. Oleh itu, penyelidikan ini menggunakan data untuk menganalisa ancaman utama, dan sejauh mana Akta Pemuliharaan Hidupan Liar 2010 (WCA) dan Akta Perdagangan Antarabangsa Mengenai Spesies Terancam 2008 (INTESA) boleh menangani ancaman tersebut. Penyelidikan ini juga mengenalpasti obligasi CBD dan CITES terhadap pemuliharaan gajah Asia; WCA dikaji untuk obligasi CBD dan INTESA untuk obligasi CITES. Data utama daripada temu bual dan data sekunder telah dikumpul dan dianalisa dengan kaedah tematik analisis kandungan secara induktif dan deduktif. Hasil kajian menunjukkan bahawa konflik manusia-gajah (HEC), perubahan penggunaan tanah dan pemburuan ialah punca-punca utama pengancaman gajah Asia. Penukaran hutan kepada kawasan penanaman dan kawasan manusia menyebabkan konflik manusia-gajah, perubahan penggunaan tanah dan mengurangkan habitat gajah. Dengan ini, petani mengalami kerugian disebabkan kerosakan tanaman, hartanah dan kecederaan serta kematian manusia kesan daripada konflik manusia-gajah. Konflik manusia-gajah juga menyebabkan gajah dibunuh dan kekurangan penerimaan dalam aktiviti kewujudan bersama antara gajah dan manusia. Selain itu, permintaan dan kepulangan yang tinggi daripada pemerdagangan gading, termasuk kemiskinan dan rasuah, ialah punca-punca utama kepada pemburuan gajah. Akibatnya, pemburuan gajah boleh menjejaskan nisbah jantina gajah. WCA mengawal selia perdagangan, pemburuan, pemilikan dan pembiakan gajah melalui lesen, permit dan permit khas, manakala INTESA mengawal perdagangan, pembiakan gajah dalam kurungan serta transit, melalui permit, sijil dan pendaftaran. WCA juga memelihara habitat dan menangani konflik manusia-gajah dengan mewartakan habitat gajah kepada kawasan perlindungan

dan mitigasi untuk konflik manusia-gajah. Walau bagaimanapun, jumlah denda dan tempoh penjara yang dikenakan untuk kesalahan-kesalahan yang melibatkan anak gajah yang dibiak dalam kurungan adalah kurang berbanding kesalahan-kesalahan sama untuk gajah liar. Oleh itu, INTESA mengenakan denda dan tempoh penjara yang lebih tinggi. Tambahan pula, CBD melaksanakan obligasi-obligasi berkaitan dengan perlindungan dan konservasi habitat dan sumber genetik gajah; pembangunan mapan kepelbagaian biologi; akses kepada dan perkongsian faedah yang terhasil daripada penggunaan sumber genetik gajah; dan akses kepada dan pemindahan teknologi. WCA melaksanakan CBD obligasi melalui seksyen-seksyen yang sama dalam menangani isu kehilangan habitat dan konflik manusia-gajah. Namun, WCA tidak menguatkuasakan sebarang seksyen untuk menangani isu-isu berkaitan akses kepada dan pemindahan teknologi. Selain itu, obligasi-obligasi CITES yang berkaitan dengan konservasi Gajah Asia merangkumi peraturan-peraturan perdagangan untuk spesies dalam Lampiran I; bentuk permit dan sijil; dan langkah-langkah yang harus dilakukan oleh parti kepada CITES. INTESA membenarkan pembiakan gajah dalam kurungan untuk tujuan komersial dan permit import tidak diwajibkan dalam eksport dan re-eksport. Oleh sebab CITES mewajibkan penjagaan untuk gajah dalam perdagangan, INTESA hanya mewajibkan penjagaan diberikan kepada gajah yang diimport dan gajah yang disimpan dalam Malaysia. Kesimpulannya, ancaman utama kepada gajah Asia dan pengakuran akta di Malaysia untuk konvensyen persekitaran antarabangsa telah dibincangkan. Namun, semakan dan pemindahan akta perlu dilakukan.

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I certify that a Thesis Examination Committee has met on 08 June 2016 to conduct the final examination of Lee Ee Ling on her thesis entitled "Threats and Regulatory Protection of Asian Elephants in Peninsular Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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LIST OF ABBREVIATIONS

AAPGs	Principles and Guidelines for the Sustainable Use of Biodiversity
AREAS	Asian Rhino and Elephant Action Strategy
Asean-Wen	Asean Wildlife Enforcement Network
ARF	Asean Regional Forum
AsESG	Asia Elephant Specialist Group
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of WildFauna and Flora
CFS	Central Forest Spine
CNP	Chitwan National Park
COP	Conference of Parties
CPB	Cartagena Protocol on Biosafety
DNA	Deoxyribonucleic Acid
DWNP	Department of Wildlife and National Parks (DWNP) Peninsular Malaysia
EKVE	East Klang Valley Expressway
EQA	Environment Quality Act 1974
ESA	Environment Sensitive Areas
EU	European Union
FAO	Food and Agriculture Organization
FMT	Free Malaysia Today
FPAS	Faculty of Environmental Studies
GPS	Global Positioning System
GTAEF	Golden Triangle Asian Elephant Foundation
HA	Hectares
HEC	Human-Elephant Conflict
INTESA	International Trade in Endangered Species Act 2008 (Act 686)
IUCN	International Union for Conservation of Nature
LMA	Lead Management Authority
LMO	Living Modified Organism

M	Metres
MA	Management Authority
MACC	Malaysian Anti-Corruption Commission
MEME	The Management and Ecology of Malaysian Elephants
MNRE	Ministry of Natural Resources and Environment
MNS	Malaysian Nature Society
MOSTE	Ministry of Science, Technology and Environment
MOU	Memorandum of Understanding
mtDNA	Mitochondria DNA
NDF	Non-detriment findings
NECAP	National Elephant Conservation Action Plan
NECC	National Elephant Conservation Centre
NGOs	Non-Governmental Organizations
PAs	Protected Areas
SA	Scientific Authority
SBSTTA	Subsidiary Body on Scientific, Technical and Technology Advice
SOS Selangor	Save Our Sungai Selangor
SSC	Species Survival Commission
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce
TrEES	Treat Every Environment Special
TSS	Total Suspended Solids
WCA	Wildlife Conservation Act 2010 (Act 716)
WCS	Wildlife Conservation Society
WWF-Malaysia	World Wide Fund for Nature Malaysia
UK	United Kingdom
UNMC	University of Nottingham Malaysia Campus
UPM	Universiti Putra Malaysia
US	United States

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Asian elephant is endemic to 13 Asian elephant range states namely Thailand, Myanmar, Vietnam, Laos, Indonesia, China, India, Bangladesh, Sri Lanka, Bhutan, Cambodia, Malaysia and Nepal. The population of Asian elephant is decreasing. Asian elephant is being categorised as "endangered" in the IUCN Red List of Threatened Species 2015 and listed in the Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since July 1, 1975. The "endangered" status implies the population of Asian elephants has decreased over 50 percent within three decades (Choudhury et al., 2015; IUCN, 2012).

In Malaysia, the species is distributed across Peninsular Malaysia and Borneo which the former has an estimated population between 1220 and 1440 (Perera, 2009; Saaban et al., 2011). Asian elephant in Peninsular Malaysia is distinct with Borneo Pygmy elephant in Borneo, as the later has been recognised as a subspecies of Asian elephants (Alfred et al., 2011; Fernando et al., 2003; Santiapillai and Sukumar, 2006). In Peninsular Malaysia, the species is widely inhabited in seven states namely Perak, Kelantan, Pahang, Terengganu, Kedah, Negri Sembilan and Johor where the largest population is found in Taman Negara National Park located across Kelantan, Terengganu and Pahang (Choudhury et al., 2015; Saaban et al., 2010). The estimated population of Asian elephants in Perak lies between 230 and 280 whereas the estimated population of Asian elephant in Terengganu is between 120 and 140 (Saaban et al., 2011). Kedah hosts a population of 50 to 60 Asian elephants and the population of Asian elephants which lies between 250 and 300 is inhabited in the state of Kelantan (Saaban et al., 2011). In addition, Pahang and Negri Sembilan are inhabited by an approximately 150 and 3 Asian elephants respectively (Saaban et al., 2011). Moreover, the estimated population of Asian elephant in Johor lies between 130 and 180, meanwhile, the estimated population of the remaining Asian elephants in Taman Negara National Park is between 290 and 350 (Saaban et al., 2011).

The conservation of Asian elephants is affected by habitat loss and fragmentation resulted from human activities such as the expansion of plantation and infrastructure construction (eg. construction of roads, highways, railways and human settlements) and others, to support developments (Bal et al., 2011; Clements et al., 2010; Lin et al., 2008; Saaban et al., 2011). The rapid conversion of forests into plantations for rubber, oil palm, wheat, sugarcane and others also reduced the availability of food and water sources to the elephant (Azmi and Gunaryadi, 2011; Chakraborty and Mondal, 2012). Similarly, habitat loss and fragmentation also seem to disturb elephants' migratory routes (Joshi and Singh, 2007; Sukumar and Santiapillai, 2006; Vancuylenberg, 1977). With the loss and fragmentation of habitat and the reduction of available food and water sources, elephants are more likely to intrude into nearby plantation and create human-elephant conflict (HEC).

HEC often takes place when elephants raid crops planted by the farmers and sometimes, elephants also destroy houses, cars or huts, because the elephants find themselves in competition with human being for shelters, foods and water sources (Archie and Chiyo, 2012; Wilson et al., 2013). The elephants might also injure or kill people brutally (Chakraborty and Mondal, 2012). However, elephants can also die due to HEC, because farmers who are affected by HEC might dislike the existence of elephants in their plantations or settlements and subsequently, sabotage or kill them (Chakraborty and Mondal, 2012; Dickman, 2010). To mitigate HEC, various methods have been implemented such as relocation of people, fences, trenches, human guardians, plantation of buffer crops, compensation and etc (Dickman, 2010; Zhang and Wang, 2003). However, the attempt to implement the HEC mitigation methods to eradicate HEC is still far from reached.

Furthermore, the highly profitable trade involving elephant body parts, especially ivory, is still rampant (Hansen et al., 2012; Stiles, 2004). For example, Sumatran and Myanmar elephants are reduced significantly due to illegal poaching of elephants' body parts (Hedges et al., 2005; Leimgruber et al., 2011). Furthermore, carvers and dealers perceived Asian ivory is more superior and higher in quality as compared to African and Indian ivory respectively (Shepherd and Nijman, 2008). Although African elephants are severely affected by ivory trade, the profitable elephant trade may also influence the population of Asian elephants (Stiles, 2004). The genetic inheritability of elephants to its next generation also can be affected, because the massive elimination of male elephants can possibly affect the sex ratio between male to female elephants and eventually reduce the inheritability of healthy genetics (Archie and Chiyo, 2012; Baskaran et al., 2011; Santiapillai and Sukumar, 2006; Sukumar and Santiapillai, 2006).

Besides human activities, social problems (eg. poverty, corruption, unemployment, politic instability and etc) also affect the conservation of Asian elephants. Given the economic instability and political status in some of the Asian elephant range states, people are being forced to suffer in poverty. In Malaysia, the conversion of forests into plantations is being recognised as one of the measures to eradicate poverty in the country (Simeh and Tengku Ahmad, 2001). However, the eradication measure seems not to benefit the readily poor people and they continue to suffer in poverty due to continual HEC (Cordingley, 2008; Corea, 2006). With these economic restrictions, people are unwilling to support conservation efforts. Corruption among officers in the law enforcement or related fields has also restricted the conservation of Asian elephants. Corruption may support the growth of human activities indirectly by feeding human destruction to the biodiversity (Abensperg-Traun, 2009; Hedges et al., 2005; Naylor, 2005).

Despite numerous researches conducted regarding threats to Asian elephants within Asian elephants range states, sadly, the population of Asian elephants is still declining. "Threat" can be defined as someone or something that could cause damages or problems or harm something. In addition, Asian elephant has been recognised as 'endangered' under the IUCN Red List of Threatened Species 2015. Therefore, an in-depth study on the main threats to Asian elephants and its causes and implications in Peninsular Malaysia is indeed imperative.

At international level, Asian elephants are protected under the Convention on Biological Diversity (CBD) and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CBD aims to conserve biological diversity, ensure sustainable use of biological diversity and equal benefit sharing from the utilisation of biological resources. CITES, on the other hand, has a smaller scope as it aims to regulate trade of endangered and potentially threatened wild plants and animals to assure such trades are not threatening the survival of the species. All Asian elephant range states are parties to both conventions except Bhutan and Laos, which are not yet signatories to CITES. As CBD and CITES have been signed and ratified by over 100 countries globally, including Malaysia, these conventions play a significant role in conserving Asian elephants and their habitats.

In Malaysia, the Malaysian government has gazetted several legislations to protect and conserve biological diversity, as well as to comply with the obligations under CBD and CITES. The primary legislation to implement the two conventions in Malaysia is Wildlife Conservation Act 2010 (Act 716) (hereinafter as "WCA") and the International Trade in Endangered Species Act 2008 (Act 686) (hereinafter as "INTESA"). The WCA legislation applies to Peninsular Malaysia and Federal Territory of Labuan while INTESA applies to the whole Malaysia including Sabah and Sarawak.

Although researches on the implementation of both conventions to biodiversity as a whole have been published, yet, research pertaining the CBD and CITES obligations in relation to conservation of Asian elephants is still little known, let alone the research on how far Malaysian legislation in addressing CBD and CITES conservation of Asian elephants in Peninsular Malaysia. Furthermore, researches addressing how far the WCA and INTESA in addressing issues related to main threats are still scarce from Peninsular Malaysia. This is simply because the legislation and existing conservation efforts in Peninsular Malaysia seems inadequate to minimise the threats effectively given that the Asian elephant populations are still declining. Thus, how far the national legislation in addressing main threats to Asian elephants in Peninsular Malaysia, including its causes and implications shall also be examined to improve the conservation and management to the remaining population of Asian elephants in Peninsular Malaysia.

1.2 Research objectives

The study aims to examine the legislative protection status of Asian elephants in Peninsular Malaysia.
The specific objectives are as follow:

1. To identify the causes and implications of the top main threats that caused the endangerment of Asian elephants.
2. To investigate the existing Malaysia legislation on wildlife conservation addresses the identified main threats to Asian elephant.
3. To examine the existing Malaysia legislation on wildlife conservation complies with CBD and CITES obligations related to Asian elephants conservation.

1.3 Research questions

1. What are the causes and implications of the top main threats to Asian elephant conservation?
2. How far Malaysian legislation on wildlife conservation addresses the identified main threats?
3. How far Malaysian legislation on wildlife conservation addresses the country's obligations under CBD and CITES with regards to Asian elephant?

1.4 Significance of the study

The results of the research improve parts and parcel to the main threats to Asian elephant in Asian elephant range states. Furthermore, the research on how far the Malaysian legislation in addressing to the main threats and its causes and implications can improve to the better understanding on threats to Asian elephants.

Given the research might be the first study that closely looks at Asian elephant protection under CBD and CITES, including the analysis of the CBD and CITES obligations related to Asian elephant conservation are relatively important since Malaysia is one of the signatories to both international environmental conventions. Moreover, study on how far the Malaysia legislation on wildlife conservation has addressed to those obligations is also important to provide possible insights to help conservation of Asian elephants in Peninsular Malaysia. The results of the research may also help legislature to see how far the current implemented wildlife laws with respect to CBD and CITES in relation to Asian elephants conservation.

To this end, the research may provide insights to policy makers to improve the existing legislative framework in the protection and conservation of Asian elephants in Peninsular Malaysia. Similarly, the research can also help scientist and social scientist to have a better understanding to the current threats and conservation status of Asian elephant in proposing a better conservation measures in Peninsular Malaysia and other Asian elephant range states likewise.

1.5 Limitation of the study

The analysis of main threats to Asian elephants and its causes and implications is confined to Peninsular Malaysia. Thus, the research may not applicable to Borneo Pygmy Elephants in Sabah which located within Borneo. Journal articles from Asian elephant range states were gathered and analysed to reflect the situation in Peninsular due to the limited journal articles published from Peninsular Malaysia relating to main threats to Asian elephants. Another reason is Asian elephant range states and Peninsular Malaysia share a much similar patterns in human developments (such as replacement of forests to oil palm and rubber plantations, including infrastructure developments and others) that caused similar set of problems. Furthermore, the analysis of Malaysian legislations on wildlife conservation only reflects how far the legislation has addressed to the causes and implications to Asian elephants. Thus, the research could not be made applicable to the general implementation of WCA and INTESA to

all wildlife in Peninsular Malaysia as a whole. Moreover, the analysis only reflects insights respecting to only two main Malaysian legislations (WCA and INTESA). Hence, the analysis shall strictly refer to the context of WCA and INTESA as compared to all other relevant legislations and policies as a whole.

Besides that, the analysis between Malaysian legislation on wildlife conservation and CBD is restricted to how far the legislation has address to the CBD obligations and sub-obligations with respect to Asian elephants. Therefore, the research cannot be made applicable to general implementation of CBD in Malaysia. This is because CBD is being implemented to address broad aspects involving conservation, access to and benefit sharing resulted from the utilisation of biodiversity of both plants and animals, including *in situ* (habitat) and *ex situ* conservation (eg. technology, genetic resources, traditional knowledge and etc.) rather than only one species.

In addition, CITES is another implemented international environmental convention in relation to endangered wildlife which aims to regulate wildlife trade and market. The research shall not made applicable to the general implementation of CITES relating to Asian elephant conservation to all Asian elephant range states. This is because the analysis is focusing on CITES implementation from the aspect of Malaysian legislations. Similarly, the analysis shall not be made applicable to general implementation of CITES with regards to all wildlife in Peninsular Malaysia likewise, given that the research is looking at the CITES implementation from the context of Asian elephants conservation.

Notwithstanding that, the research does not include enforcement related issues in the analysis as the research focuses on the contents of provisions. In other words, this research is not an ordinary legal research considering enforcement related issues. Hence, the enforcement of WCA and INTESA with respect to the causes and implications to Asian elephants is excluded in the research. Similarly, the enforcement of WCA and INTESA dealing with CBD and CITES obligations respectively are also excluded in the research.

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PUBLICATIONS

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