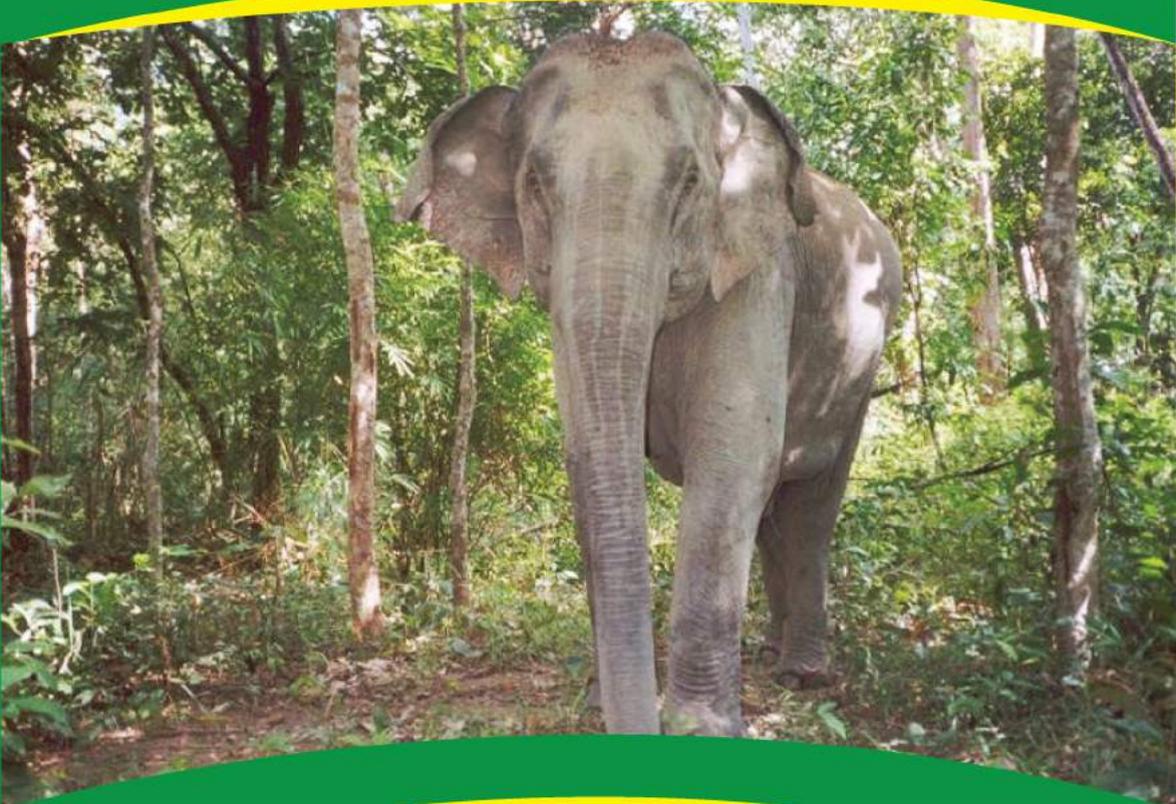


Kingdom of Cambodia
Nation Religion King



Asian Elephant Conservation Action Plan for Cambodia (2020-2029)



Phnom Penh 2020

GDANCP(2020). Asian Elephant Conservation Action Plan for Cambodia (2020-2029)

Produced by General Directorate of Administration for Nature Conservation and Protection, Ministry of Environment, with technical support from Fauna & Flora International (FFI)

Address: 2nd floor of Ministry of Environment, Morodok Techo Building, Sangkat Tonle Bassac, Khan Chamkarmon, Phnom Penh, Cambodia





Contents

Abbreviations	ii
Preface	iii
Acknowledgements	v
Executive Summary	vi
1. Background	1
1.1 Elephant status in Cambodia	1
1.2 Priority Issues	5
1.2.1 Habitat loss and fragmentation	5
1.2.2 Human-elephant conflict (HEC)	6
1.2.3 Poaching	7
1.2.4 Live capture	8
1.2.5 Small population size	9
1.2.6 Human disturbance	9
2. Strategy	10
3. Strategic Action Plan	12
3.1 Strategic Action 1: Reduce habitat loss	12
3.2 Strategic Action 2. Conserve and improve connectivity between habitats and subpopulations	12
3.3 Strategic Action 3. Improve law enforcement	13
3.4 Strategic Action 4. Prevent live capture	13
3.5 Strategic Action 5. Mitigate human-elephant conflict	14
3.6 Strategic Action 6. Improve awareness and education	14
3.7 Strategic Action 7. Research on and monitoring of elephant populations	15
4. Budget Summary	21
5. Monitoring and Evaluation	22
6. Conclusion	22
References	24



Abbreviations

CECG	Cambodian Elephant Conservation Group
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	Environmental impact assessment
EPL	Eastern Plains Landscape
FFI	Fauna & Flora International
GDANCP	General Directorate of Administration for Nature Conservation and Protection
GDLC	General Directorate for Local Community
HEC	Human-elephant conflict
IUCN	International Union for Conservation of Nature
MIKE	Monitoring Illegal Killing of Elephants
MoE	Ministry of Environment
MoEYS	Ministry of Education, Youth and Sport
MoT	Ministry of Tourism
MPWT	Ministry of Public Works and Transport
NGO	Non-governmental organisation
NTFPs	Non-timber forest products
PDoE	Provincial Department of Environment
USAID	United States Agency for International Development
WA	Wildlife Alliance
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund

Preface

The Royal Government of Cambodia, benefiting from peace and strong and stable politics grounded on the national constitution and laws, under the visionary leadership of **Samdech Akka Moha Sena Padei Techo Hun Sen**, Prime Minister of the Kingdom of Cambodia, has issued a multitude of national policies aiming to achieve a balance between development and conservation in the context of environmental sustainability and natural resource management.

In this context, the Royal Government of Cambodia has expanded the coverage of protected areas and biodiversity corridors, creating a protected area system covering 7.2 million hectares, or 40% of the country's surface. In order to manage this network effectively, the Ministry of Environment works with relevant ministries, institutions, national and sub-national stakeholders, national and international non-governmental organisations and local communities to protect, conserve, and utilise natural resources sustainably.

As part of its efforts, the Ministry of Environment pays close attention to the conservation of the Asian elephant, a culturally and ecologically important species, thereby contributing to the conservation of other species within the elephant's range. Asian elephants in Cambodia are currently estimated to number only between 400 and 600 individuals. Decreasing habitat connectivity has resulted in fragmented populations, negatively affecting the species' social interactions, breeding, and long-term viability. These concerns have led to the development of this ten-year Action Plan. The Action Plan aims to strengthen wildlife management, in particular management of Asian elephants, so that their populations are protected and able to recover, ultimately safeguarding this cultural heritage icon for future generations. We hope this Action Plan will lend us an opportunity to work with national and international stakeholders in order to strengthen the technical expertise and task implementation



necessary for the protection and conservation of natural resources, ecological systems and biodiversity, especially for threatened species such as the Asian elephant, which currently graces our national protected area system.

On behalf of the Ministry of Environment, I would like to express my highest gratitude to **Samdech Akka Moha Sena Padei Techo Hun Sen**, Prime Minister of the Kingdom of Cambodia, for his continued support on environmental and natural resource matters. I would also like to thank and compliment the management team and officials at the Ministry of Environment, relevant ministries, partner local and international NGOs, private sector, and local communities for their support and good collaboration in the development of this valuable document.

Phnom Penh, 18th February 2020

Say Samal
Minister of Environment

Acknowledgements

First and foremost, we would like to express our heartfelt gratitude to HE Say Samal, Minister of Environment, for his constant guidance, encouragement and unwavering support in the development of this Asian elephant Conservation Action Plan for Cambodia (2020-2029) for the benefit of protecting, conserving, and sustainably managing natural resources in Cambodia. We are sincerely grateful to HE Meas Sophal, General Director of the General Directorate of Administration for Nature Conservation and Protection, and HE Kim Nong for their vision, encouragement, and support from data collection to meetings, and various stakeholder consultation workshops for the preparation of this Plan. We thank officials from the Department for Conservation of Terrestrial Protected Areas South of Tonle Sap Lake for their constructive feedback, both on content and wording.

We would particularly like to thank Fauna & Flora International (FFI), including the Cambodian Elephant Conservation Group (CECG), for their active technical support in the development of this 10-year Action Plan.

We are appreciative of the technical officials and protected area directors from the Ministry of Environment, Forestry Administration, various conservation organisations (Conservation International, Maddox Jolie-Pitt Foundation, Wildlife Alliance, Wildlife Conservation Society, World Wildlife Fund) and all other stakeholders for providing valuable inputs during the sub-national and national workshops.

Special thanks to FFI, WWF, WA, and WCS for providing helpful feedback and constructive criticism on drafts of this Action Plan. Finally, we are grateful to GDANCP, FFI and WWF for providing pictures used in this Plan.



Executive Summary

Cambodia has a protected area and biodiversity corridor network, covering 40% of the country's surface, which is under the jurisdiction of the Ministry of Environment. Due to the need for a flagship species action plan, the General Directorate for Administration of Nature Conservation and Protection, with technical and financial support from Fauna & Flora International (FFI) and in collaboration with partner conservation organisations and relevant stakeholders, developed this Asian Elephant Conservation Action Plan for Cambodia (2020-2029). The goal was to create a plan that identifies threats to elephant conservation, and the actions needed to help overcome those threats to ensure long-term elephant conservation throughout Cambodia. This Plan was conceptualised during a national workshop in 2012 and subsequent consultation workshops were organized throughout the country with inputs from relevant technical officials, provincial authorities, national and international organisations, development partners and local communities.

This Action Plan has proposed seven strategic actions (reduce habitat loss, conserve and improve habitat connectivity, improve law enforcement, prevent wild capture, mitigate human-elephant conflict, improve awareness, and undertake research) and 31 activities to achieve those objective.

The scope of the actions proposed here are nationwide, and their implementation will contribute to protected areas and biodiversity corridors meeting their overall purposes, which needs to be evaluated regularly, and measures identified to address any challenges. Information from this evaluation will guide the selection of the most suitable activities and timeframes for integration into action plan(s), and will help identify human resources and institutional capacity, technological, and financial needs.

2020-2029 Elephant Action Plan

1 Background

Taxonomy

Phylum:	Chordata
Class:	Mammalia
Order:	Proboscidea
Family:	Elephantidae
Genus:	<i>Elephas</i>
Species:	<i>maximus</i>

Asian elephants are categorized by the IUCN as Endangered (A2c) and listed on CITES Appendix I. Cambodia is a party to both CITES and the Convention on Biological Diversity, demonstrating Cambodia's commitment to protecting biological diversity.

1.1 Elephant status in Cambodia

The global population of the Asian elephant, *Elephas maximus*, has declined by an estimated 50% over the past 60-75 years (Choudry *et al.* 2008), and its historic worldwide range has been reduced by almost 90% (Hedges *et al.* 2008). Of the estimated 39,463-47,427 elephants still in the wild, almost 75% are found in India and Sri Lanka (Fernando & Pastorini 2011). Elephants are considered a flagship, keystone, and umbrella species due to their cultural significance, important role in ecosystems, and their large area requirements. Asian elephants occupy forest, grassland and scrubland, where they are important browsers, grazers and fruit eaters.

The total population of wild elephants in Cambodia has decreased dramatically, and is now estimated to be only 400-600 (Maltby & Bourchier 2011, Gray *et al.* 2014). Especially troubling is the small,



highly fragmented nature of the remnant populations. The standard estimate for a minimum viable population for long-term conservation is around 500 breeding individuals, a ratio of 1:5 males to female, and a density of 0.5 elephants/km² (Sukumar 1992). These estimates mean that a minimum area for viable long-term elephant conservation is around 4,400 km² of contiguous elephant habitat (Sukumar 1992). These two requirements – required area and minimum population size - suggest the situation in Cambodia is extremely dire. The two core elephant populations (see below) only have a fraction of the minimum viable population. However, three landscapes (Cardamom Mountain Landscape, Eastern Plains Landscape, and Virachey National Park-Nan Ghong) do have the required minimum area for long-term conservation. Immediate and effective conservation actions are required in order to prevent elephants from going extinct in Cambodia.

The two core populations of elephants are in the Cardamom Mountains Landscape, which spans Kirirom National Park (Kompong Speu), Central Cardamom Mountain National Park (Koh Kong and Pursat), Southern Cardamom Mountain National Park (Koh Kong), Botum Sakor National Park (Koh Kong) and Samkos Wildlife Sanctuary (Pursat, Battambang, and Koh Kong); and the Eastern Plains Landscape (Monduliri and Rattanakiri Provinces), which includes Phnom Prich Wildlife Sanctuary, Srepok Wildlife Sanctuary, Keo Seima Wildlife Sanctuary and Lomphat Wildlife Sanctuary.

In the Cardamom Mountains Landscape, Southern Cardamom National Park likely holds the largest population. There are additional small, fragmented populations (numbers unknown but likely less than 20) in Tatai Wildlife Sanctuary, Botum Sakor National Park, Kirirom National Park, Samkos Wildlife Sanctuary and Samlaut Multiple Use Area (Pailin and Battambang provinces). Maltby & Bouchier (2011) estimated that this landscape may harbor around 175 elephants. The total elephant core area was estimated to be around 6,429 km² by



10-19-2017 11:38:27



Elephant herd captured by camera trap in Kirirom National Park, Cardamom Mountain Landscape

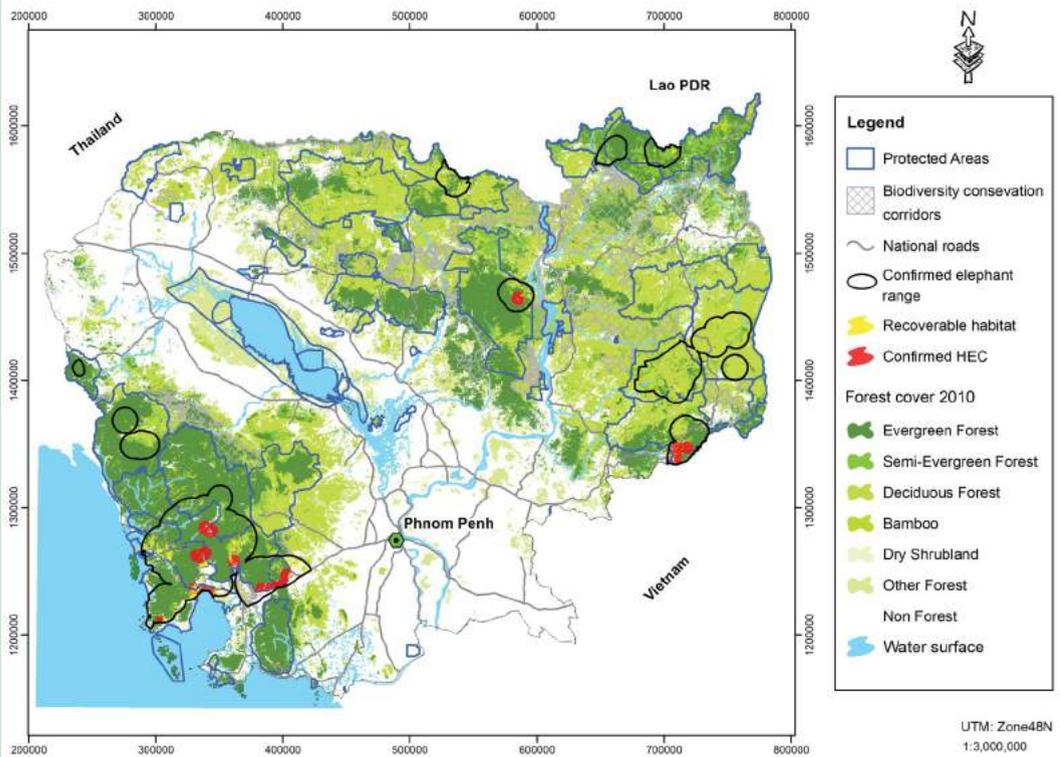
Hedges *et al.* in 2008, but development needs and new settlements during the last decade has likely reduced this considerably.

In the Eastern Plains Landscape there are an estimated 101-139 elephants in Keo Seima Wildlife Sanctuary (Pollard *et al.* 2008), 101-175 in Phnom Prich Wildlife Sanctuary (Gray *et al.* 2014), and at least 21 in Srepok Wildlife Sanctuary (Gray *et al.* 2014). Anecdotal reports suggest that individuals move between Srepok Wildlife Sanctuary and Yok Don National Park in Vietnam. Hedges *et al.* (2008) estimated the total elephant core area for this landscape to be approximately 2,154 km² with 1,126 km² in Phnom Prich Wildlife Sanctuary, 408 km² in Srepok Wildlife Sanctuary, and 620 km² in Keo Seima Wildlife Sanctuary. However, movement patterns may have altered since this period. More research is required to understand distribution and seasonal movements and whether elephants in the Eastern Plains Landscape are a meta-population or a series of isolated breeding populations. Nevertheless in total this landscape may have upwards of 300 elephants (Gray *et al.* 2014).

Other smaller fragmented populations in Cambodia include approximately five individuals in Cheb Wildlife Sanctuary and at least thirteen individuals in Prey Long Wildlife Sanctuary (Hayes *et al.*, 2015). There is a confirmed population of elephants in Virachey National Park. This population of unknown size likely moves between Virachey and Attapeu Province in Lao PDR.

In the past two decades elephants have been extirpated from Kulen Promtep Wildlife Sanctuary, Lumphat Wildlife Sanctuary, and Phnom Nam Lyr Wildlife Sanctuary. It is currently unclear whether elephants still persist or have disappeared from Phnom Aural Wildlife Sanctuary and Bokor National Park.

Elephant range map and human-elephant conflict hotspots in Cambodia



1.2.1 Habitat loss and fragmentation

Elephants require extremely large areas (> 4,400 km²) of continuous habitat to persist in the long term. The remaining elephant populations in Cambodia are being pushed into shrinking patches as their habitats are converted to large and small-scale agriculture and used to accommodate new settlement, infrastructure, and to fulfil other development needs.

This is especially evident in lowland areas of the Cardamom Mountains, which are increasingly subject to large-scale projects such as dams and other infrastructure. These projects will continue to fragment populations and displace them from critical habitats. National Road No. 4 that runs from Phnom Penh to Preah Sihanouk Province has cut off all elephant movement between Bokor National Park and Kirirom National Park. Furthermore, development along the road has resulted in extensive elephant habitat loss, especially encroachment into Kirirom National Park and the adjacent forest. Of particular concern is development along the Sre Ambel River which is presenting a major threat of fragmentation to the population and further isolating the Kirirom elephant sub-population. Infrastructure development from Veal Bi (along national road 48) to Thmor Baing and the increasing human settlement in Veal Bi itself, which is in the core area of the elephant habitat in the Cardamom, is another major disruption on elephant population and their movement. National Road No. 48, which stretches from Sre Ambel to Koh Kong, appears to be disturbing elephant movement patterns. Recent surveys suggest that the elephants have been avoiding the road, which means a historic travel route may now be blocked, further fragmenting the population.

The elephants in Samkos Wildlife Sanctuary have been displaced and fragmented by road development to Thma Dah, and on the east by



the road to O'Som.

Prey Lang Wildlife Sanctuary has been disconnected from Cheb Wildlife Sanctuary due to forest conservation to agriculture, increasing human settlement along the road from Preah Vihear to Stung Treng Provinces, and large economic land concessions, thus isolating the two elephant populations.

The Eastern Plains Landscape is a contiguous network of nine protected areas, six in Cambodia and three in Vietnam. In the northeast, elephants likely move between Virachey National Park and Attapeu Province in Laos. In recent years, however, the connectivity between these different areas has been eroded, necessitating transboundary collaboration to protect elephant movements between those areas.

Infrastructure development needs, the building of new roads and upgrading of existing ones, result in increasing human traffic in core elephant habitat, shrinking these habitats and disrupting connectivity and migration routes. An example of this is National Road 76, which cuts through the western section of the primary elephant habitat in Srepok Wildlife Sanctuary.

1.2.2 Human-elephant conflict (HEC)

Human-elephant conflict has significant negative impacts on both elephants and humans. Elephants suffer from stress which can cause a range of problems for an individual's health (e.g. increased parasite loads; Hing 2012), and their movement patterns (both small scale and migratory) and access to resources may be affected by the presence of humans. Furthermore, they are at risk of injury or death from people retaliating for damage caused by elephants.

Human-elephant conflict also affects human populations through the destruction and loss of crops, damage to houses and infrastructure, and the potential for injury or death when close encounters with

elephants occur. The underlying cause of human-elephant conflict is encroachment into elephant habitat. HEC occurs frequently in Pich Nil valley, the eastern and southern side of Kirirom National Park, along the foot of Pich Nil hill in Kampong Speu Province, and in the Thmor Roong area in Preah Sihanouk Province. It also happens frequently in the Areng area in Prek Svay Village, Thmor Daun Pov Commune, Thmor Baing District in Southern Cardamom Mountains National Park and Central Cardamom Mountains National Park, as well as in Prek Smach Village in Botum Sakor National Park in Koh Kong Province. HEC also takes place in Prey Lang Wildlife Sanctuary in Kratie Province and in Keo Seima Wildlife Sanctuary in Mondulkiri Province.

In the Eastern Plains Landscape, the frequency and scale of HEC has increased dramatically over the last several years, primarily in Keo Seima Wildlife Sanctuary.

Supporting communities in HEC mitigation has been quite successful, as there have not been any reported retaliatory elephant deaths or injuries in the past several years. The best and most sustainable strategy to deal with HEC is to train local people in mitigation techniques.

1.2.3 Poaching

Poaching over the last 30 years has decimated the elephant population in Cambodia. The levels of hunting have abated significantly over the last 10 years due in no small part to heavy law enforcement interventions. There has not been a reported incident of poaching in the Cardamom Landscape since 2003. A recent increase in elephant deaths within EPL over the last several years, with 8 elephant carcasses found, is associated with poaching. Anecdotal reports suggest some of the deaths resulted from the continued demand for elephant parts. Elephant mortalities could be under-reported because law enforcement and community patrol teams are limited in number while hunting occurs over vast areas of forest.

Poaching and illegal wildlife trade in Mondulkiri remain a top priority for interventions and management action.

In addition to improved roads throughout the country and across international borders, there has been an increase in small roads throughout protected areas, thus increasing accessibility and facilitating poaching within key elephant habitats.

Market ivory surveys in Phnom Penh and Siem Reap suggest that there is a demand for ivory from Chinese, Vietnamese and Cambodian buyers, amongst others. There is some indication that this demand is increasing, and there is a risk that international buyers may enter Cambodia to purchase ivory for re-sale in their countries of origin. This may increase demand for imports of ivory and other elephant parts to Cambodia, and potentially lead to poaching of local elephant to meet such demand.

Recent camera trap images from the Southern Cardamom Mountains have shown four out of seven baby elephants with wire snare injuries to their legs, with one confirmed death as a result. This points towards a significant risk of incidental killing or injuring of elephants through the widespread use of wire snares for hunting throughout the country. Given elephants' slow reproductive cycle, if calves are experiencing high mortality due to snare injuries, the recovery of the species is likely to be jeopardized.

1.2.4 Live capture

Currently, live capture is rare and classified as illegal in Cambodia. However, there is a market for domestic elephant-based tourism (e.g. elephant rides). The current captive elephant population in Cambodia numbers approximately 71, but this population is aging and not breeding, thus there is a high risk of an increasing demand for replacement domestic elephants occurring over the next decade. The current wild population of elephants in Cambodia is so small that

the capture of any animal is unjustifiable and could have very serious negative consequences. Meanwhile, the import of elephants from other countries should be closely monitored and regulated.

1.2.5 Small population size

Low numbers of elephants and high levels of forest fragmentation make the wild elephants in Cambodia highly vulnerable to local extinction due to stochastic effects and to loss of genetic diversity (which can lead to reduced fertility and increased susceptibility to disease). Every population of elephants in Cambodia is small and at a very high risk of further fragmentation due to encroachment, development and human disturbance.

1.2.6 Human disturbance

Human disturbance can affect seemingly intact habitat. Elephants in Cambodia may be particularly vulnerable to human disturbance and exhibit avoidance behavior. The presence of humans and human activity may limit the use of certain areas by elephants, which could lead to isolated populations.

Roads, such as National Roads No. 4 and 48 are busy enough for elephants to avoid them, thus limiting their ability to migrate and exchange genes with other sub-populations. Other areas, such as important corridors in Sre Ambel, may be so heavily used by locals logging, hunting and collecting NTFPs that the elephants completely avoid them. Heavy infrastructure construction may also be disrupting enough to displace elephants.

The building of new roads and upgrading of existing roads in the Eastern Plains Landscape is a contributing factor to habitat fragmentation and disturbance. In Seima, the upgrading of National Road 76 has caused a vast increase in the quantity, frequency, and

speed of traffic through the important elephant habitat in the protected area. Similarly, increasing traffic along National Road 76a may have fragmented a populations that used to move between Phnom Prich Wildlife Sanctuary and Srepok Wildlife Sanctuary. Thus both of these major roads are likely to have had major impacts on the movements of the elephant population which will likely continue due to increasing traffic and noise.

Furthermore, increased accessibility throughout rural areas in the country has resulted in additional in-migration, small-scale clearances of forest combined with increased levels of illegal logging and hunting. Illegal logging and hunting within protected areas is likely to be a major cause of disturbance to elephants within EPL. This problem is particularly apparent south of National Road 76 and down to the international border with Vietnam. The movement of the elephant population further north into Seima is also likely to be a reflection of this, as elephants move away from their traditional high use areas into less disturbed areas. Furthermore, recent anecdotal evidence in 2015 suggest that movement patterns appear to be changing within Phnom Prich Wildlife Sanctuary and Srepok Wildlife Sanctuary due to increased illegal activities occurring within their core areas.

2 Strategy

The goal of this Action Plan is to provide a policy framework and management mechanism, with involvement of relevant stakeholders, to reduce threats to elephants for their long-term survival.

The Plan proposes seven strategic actions:

Strategic Action 1. Reduce habitat loss

Strategic Action 2. Conserve and improve connectivity between

habitats and subpopulations

Strategic Action 3. Improve law enforcement

Strategic Action 4. Prevent live capture

Strategic Action 5. Mitigate human-elephant conflict

Strategic Action 6. Improve awareness and education

Strategic Action 7. Research on and monitoring of elephant populations

The Ministry of Environment has been assigned by the Royal Government of Cambodia as the agency responsible for environmental protection, biodiversity conservation and sustainable use of natural resources. The organisation and functioning of the Ministry of Environment was reviewed through Sub-Decree 135 ANKr.BK of 5th July 2016, in an effort to improve the effectiveness and efficiency of MoE.

The Law on Protected Areas signed in 2008 is another fundamental piece of legislation that defines the framework for the management, conservation and development of protected areas. In particular, it aims to ensure that activities within protected areas are aligned with IUCN protected area management categories and governance types, to safeguard areas of high conservation value and to promote participation from and benefits for local communities and highland ethnic minorities.

Other laws also influence the management and conservation of Asian elephant in Cambodia, such as Forestry Law (2002), Land Law (2001), and Law on Environmental Protection and Natural Resource Management (1996). Furthermore, Cambodia is a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD), and the Convention on Climate Change, which reflects Cambodia's commitment to protecting biological diversity. The Asian elephant is categorised as Endangered by the IUCN and listed on Appendix I of CITES. This Action Plan is one of many efforts (such as the National

Biodiversity Strategy and Action Plan) that highlights Cambodia's commitment to formulating strategies for protecting and saving threatened species in line with national and international laws and conventions.

3 Strategic Action Plan

3.1 Strategic Action 1. Reduce habitat loss

1. Establish land use planning and zoning in and around Protected Areas and biodiversity conservation corridor based on critical needs of elephants
2. Demarcate boundary of Protected Areas and special conservation areas for elephant
3. Prepare and implement management plans
4. Improve law enforcement
5. Improve local livelihoods

Expected outcomes

1. Prepare maps and develop management plans
2. Install boundary markers for protected areas and biodiversity conservation corridors
3. Approve and follow up management plans implementation

3.2 Strategic Action 2. Conserve and improve connectivity between habitats and subpopulations

1. Identify, maintain, and protect critical corridors
2. Create new and re-establish corridors between subpopulations and habitat
3. Establish transboundary cooperation
4. Provide consultation on infrastructure development by considering the needs of wildlife movement patterns, especially

elephants', in protected areas and biodiversity conservation corridors

Expected outcomes

1. Produce maps for monitoring elephant corridors
2. Develop plans for managing elephant corridors
3. Develop bilateral agreements with neighbouring countries for maintaining elephant corridors
4. Integrate Elephant Action Plan into environmental impact assessment (EIA) documents

3.3 Strategic Action 3. Improve law enforcement

1. Strengthen law enforcement and patrol key areas
2. Reduce demand for elephant products through outreach
3. Raise awareness on national and international laws

4. Establish transboundary cooperation with neighbouring countries

Expected outcomes

1. Produce awareness materials
2. Develop plans for capacity strengthening for law enforcement officials
3. Update report on elephant products
4. Produce bilateral agreements with neighbouring countries for combating illegal wildlife trade

3.4 Strategic Action 4. Prevent wild capture

1. Set up registration system for all domesticated elephants and elephant breeding centres
2. Register domesticated elephants used for tourism
3. Campaign to make tourism providers responsible for

- domesticated elephants used for tourism
4. Strengthen law enforcement to prevent wild capture

Expected outcomes

1. Domesticated elephants registered
2. Agreements in place with Ministry of Tourism on domesticated elephant management system
3. Guideline to prevent wild capture of elephant

3.5 Strategic Action 5. Mitigate human-elephant conflict

1. Support and train communities in human-elephant conflict mitigation
2. Explore new and sustainable mitigation techniques
3. Prevent/reduce farming in elephant habitat (encroachment)
4. Improve livelihoods to reduce dependence on forest products

Expected outcomes

1. Build capacity in new techniques for preventing/reducing human-elephant conflict
2. Updated land encroachment in elephant habitats
3. Provide new techniques for local livelihood enhancement

3.6 Strategic Action 6. Improve awareness and education

1. Design and distribute educational and outreach programmes and materials
2. Promote information sharing between government agencies and NGOs

Expected outcomes

1. Produce materials for outreach and campaigns
2. Organize meeting with stakeholders

3.7 Strategic Action 7. Research and monitoring

1. Undertake population estimates every five years
2. Monitor threats (document human-elephant conflict, hunting, habitat loss, trade)
3. Carry out more studies of home range size, ranging patterns and habitat use
4. Conduct ecological studies
5. Calculate carrying capacity of elephant landscapes
6. Monitor and evaluate human-elephant conflict mitigation methods in Cambodia and other countries to facilitate adaptive management
7. Maintain national database of elephant deaths and human-elephant conflict
8. Coordinate transboundary research

Expected outcomes

1. Update elephant population estimates
2. Update elephant range map in Cambodia
3. Identify priority areas for elephant conservation
4. Identify sustainable human-elephant conflict mitigation techniques

Outline of strategic actions, responsible organisations, indicators and timeframes

Strategic Actions & Activities	Organisations	Indicators	Timeframe
Strategic Action 1. Reduce habitat loss			
1.1 Establish land use planning and zoning in and around Protected Areas and biodiversity conservation corridor based on critical needs of elephants	GDANCP, PDoE, NGOs	Maps and management plan	Short Term
1.2 Demarcate boundaries of Protected Areas and special conservation areas for elephant	GDANCP, PDoE, NGOs	Key areas demarcated	Short Term
1.3 Prepare and implement management plans	GDANCP, PDoE, NGOs	Management plans enforced, monitored and evaluated	Medium Term
1.4 Improve law enforcement	GDANCP, PDoE, NGOs	Number of enforcement cases	Long Term
1.5 Improve local livelihoods	GDLC, PDoE, NGOs	Local sustainable livelihoods improved	Long Term
Strategic Action 2. Conserve and improve connectivity between habitats and subpopulations			
2.1 Identify, maintain, and protect critical corridors	GDANCP, PDoE, NGOs	Critical corridors are identified and maintained	Medium Term
2.2 Create new and re-establish corridors between subpopulations and habitat	GDANCP, PDoE, NGOs	4 corridors established	Medium Term

Strategic Actions & Activities	Organisations	Indicators	Timeframe
2.3 Establish transboundary cooperation between national and international agencies	GDANCP, PDoE, NGOs	Agreements between authorities from each country	Medium Term
2.4 Provide consultation on infrastructure development by considering the needs of wildlife movement patterns, especially elephants', in protected areas and biodiversity conservation corridors	GDANCP, PDoE, NGOs, MPWT	EIA documents with elephant specific mitigation measures	Long Term
Strategic Action 3. Improve law enforcement			
3.1 Strengthen law enforcement and patrol key areas	GDANCP, PDoE, NGOs	Confiscation, and law enforcement strengthened	Long Term
3.2 Reduce demand for elephant products through outreach	GDANCP, PDoE, NGOs	60% reduction in domestic demand for elephant products	Long Term
3.3 Raise awareness on national and international laws	GDANCP, PDoE, NGOs	60% increase in public awareness of conservation laws	Medium Term
3.4 Establish transboundary cooperation with neighbouring countries	GDANCP, PDoE, NGOs	Agreements between authorities from each country	Long Term

Strategic Actions & Activities	Organisations	Indicators	Timeframe
Strategic Action 4. Prevent live capture			
4.1 Set up registration system for all domesticated elephants and elephant breeding centres	GDANCP, PDoE, NGOs, MoT	All domestic elephants and elephant breeding centres are registered	Short Term
4.2 Register domesticated elephants used for tourism	GDANCP, PDoE, MoT, NGOs	All domesticated elephants used for tourism registered	Medium Term
4.3 Campaign to make tourism providers responsible for domesticated elephants used for tourism	GDANCP, PDoE, MoT, NGOs	Outreach materials	Short Term
4.4 Strengthen law enforcement to prevent wild capture	GDANCP, PDoE, NGOs	Arrest reports and court documents	Long Term
Strategic Action 5. Mitigate human-elephant conflict			
5.1 Support and train communities in human-elephant conflict mitigation	GDANCP, PDoE, NGOs	7 community areas trained and supported	Medium Term
5.2 Explore new and sustainable mitigation techniques	GDANCP, PDoE, NGOs	5 different techniques tested	Medium Term
5.3 Prevent/reduce farming in elephant habitat (encroachment)	GDANCP, PDoE, NGOs	80% reduction of encroachment into elephant habitat	Long Term
5.4 Improve livelihoods to reduce dependence on forest products	GDLC, PDoE, NGOs	Projects on improving local livelihood to reduce dependence on forest products	Medium Term

Strategic Actions & Activities	Organisations	Indicators	Timeframe
Strategic Action 6. Improve awareness and education			
6.1 Design and distribute educational and outreach programmes and materials	GDANCP, PDoE, NGOs	Outreach materials and campaigns	Medium Term
6.2 Promote information sharing between government agencies and NGOs	GDANCP, PDoE, NGOs	Regular meetings and communication between stakeholders	Medium Term
Strategic Action 7. Research on and monitoring of elephant populations			
7.1 Undertake population estimates every five years	GDANCP, NGOs, MoEYS	Reports of elephant population estimates	Long Term
7.2 Monitor threats (document human-elephant conflict, hunting, habitat loss, trade)	GDANCP, PDoE, NGOs	All incidents of HEC and elephant hunting are documented; habitat loss is monitored; markets are surveyed every 2-3 years for elephant products	Long Term
7.3 Carry out more studies of home range size, ranging patterns and habitat use	GDANCP, PDoE, NGOs	Reports	Long Term
7.4 Conduct ecological studies	GDANCP, PDoE, NGOs	Reports	Long Term

Strategic Actions & Activities	Organisations	Indicators	Timeframe
7.5 Calculate carrying capacity of elephant landscapes	GDANCP, PDoE, NGOs	Studies for Eastern Plains Landscape and Cardamom Mountains Landscape conducted	Medium Term
7.6 Monitor and evaluate human-elephant conflict mitigation methods in Cambodia and other countries to facilitate adaptive management	GDANCP, PDoE, NGOs	Report on HEC mitigation methods	Long Term
7.7 Maintain national database of elephant deaths and human-elephant conflict	GDANCP, PDoE, NGOs	Set up database on elephant death and human-elephant conflict	Short Term
7.8 Coordinate transboundary research	GDANCP, PDoE, NGOs	Agreements between stakeholders	Medium Term

GDANCP General Directorate of Administration for Nature Conservation and Protection

GDLC General Directorate for Local Community

MoEYS Ministry of Education, Youth and Sport

MoT Ministry of Tourism

MPWT Ministry of Public Works and Transport

NGO Non-governmental organisation

PDoE Provincial Department of Environment

The funding for the implementation of the seven strategic actions as identified in this Action Plan will come from both the government, development partners (e.g. USAID) and NGOs, which in total amounts to an estimated 40.5 million USD. The following are estimates of funding requirements for each strategic action for the ten-year implementation from 2020 to 2029:

Strategic Action 1 “Reduce habitat loss”: 11 million USD

Strategic Action 2 “Conserve and improve connectivity between habitats and subpopulations”: 4 million USD

Strategic Action 3 “Improve law enforcement”: 10 million USD

Strategic Action 4 “Prevent live capture”: 10 million USD

Strategic Action 5 “Mitigate human-elephant conflict”: 3 million USD

Strategic Action 6 “Improve awareness and education”: 0.5 million USD

Strategic Action 7 “Research on and monitoring of elephant populations”: 2 million USD

Once adequate funding is secured, the General Directorate of Administration for Nature Conservation and Protection (GDANCP) will be in a better position to define task responsibilities and drive successful implementation.

5

Monitoring and Evaluation

This ten-year elephant Action Plan can work in tandem with other natural resource strategic management plans under the responsibilities of the Ministry of Environment. As part of the implementation of this Plan, the General Directorate of Administration for Nature Conservation and Protection (GDANCP) will work with national and international conservation organisation partners to investigate elephant population trends every five years. Suggested approaches for population estimation are presented in the CITES Monitoring the Illegal Killing of Elephants (MIKE) programme and in the Monitoring Elephant Populations and Assessing Threats Manual (Hedges, 2012). In addition, GDANCP will monitor changes in elephant habitat and corridor extent via satellite imagery; human-elephant conflict, poaching, and uses of elephant products will be monitored through monitoring and evaluation reports from each implementation site. The results will be crucial for assessing the efficacy of conservation interventions, and any necessary adjustments of the strategic actions.

6

Conclusion

This Action Plan is the culmination of years of data collection and collaboration with relevant stakeholders. It is the first Elephant Action Plan initiative in Cambodia, which will not only serve as a national road map guiding the conservation of elephants, but also the conservation of other species residing within the range of this keystone species. It will play an important role in mobilising much-needed resources to support conservation efforts throughout the country.

The Asian elephant is being pushed toward extinction globally. In Cambodia, their numbers have decreased significantly during the last 60 years, prompting urgent action to develop this Plan, in a bid to prevent local disappearance.

The biggest challenge Asian elephants face globally is the lack of large contiguous habitat, with a minimum of 4,400 Km² required for the long-term survival of each sub-population. Habitats this size still persist in Cambodia, but they are fragmented and restoration as well as effective protection is required.

Asian elephants, like other large mammals, play important roles in maintaining ecological functions. The loss of elephants can result in ecological systems being altered, leading to changes in critical environmental services upon which human rely, such as rainfall.

This Plan shows the need for improved conservation efforts and wider collaboration for successful and sustainable outcomes. Such efforts are only possible with the guidance from the government's wise and nature-loving leadership and through the implementation of rectangular strategies by the Royal Government of Cambodia. We hope this Plan will save the Asian elephant, for saving it means saving our natural heritage for the green future of the country.

References

- Choudhury A., Lahiri Choudhury D.K., Desai A., Duckworth J.W., Easa P.S., Johnsingh A.J.T., Fernando P., Hedges S., Gunawardena M., Kurt, F., Karanth U., Lister A., Menon V., Riddle H., Rübél A. and Wikramanayake E. (IUCN SSC Asian Elephant Specialist Group) (2008). *Elephas maximus*. The IUCN Red List of Threatened Species. Version 2015.2. <www.iucnredlist.org>.
- Fernando P., and Pastorini J. (2011) Range-wide status of Asian elephants. *Gajah* 35:15-20
- Gray T., Vidya T., Bharti S., and Sovanna P. (2014) Population size estimation of an Asian elephant population in eastern Cambodia through non-invasive mark-recapture sampling. *Conservation Genetics* 15:803-810
- Hayes, B., Khou E H., Neang T., Furey, N. M., Chhin S., Holden, J., Hun S., Phen S., Pengly La. and Simpson, V. (2015) *Biodiversity Assessment of Prey Lang*. Conservation International. Phnom Penh, Cambodia.
- Hedges S., Fisher K., and Rose R. (2008) *Range-wide mapping workshop for Asian elephants (Elephas maximus), Cambodia, October 2008*. A report to the U.S. Fish & Wildlife Service on Assistance Award No: 98210-6-G232.
- Hedges S. and Lawson D. (2006) *Monitoring the illegal killing of elephants*. Dung survey standards for the MIKE programme. CITES MIKE Program, Nairobi, Kenya.
- Hing, S. (2012) *A survey of endoparasites in endangered Bornean elephants Elephas maximus borneensis in continuous and fragmented habitat*. Thesis, Master of Science. Imperial College London.
- Maltby M. and Bouchier G. (2011) Current status of Asian elephant in Cambodia. *Gajah* 35: 36-42.
- Pollard E, L. Eggert, C. Cheur and S. Hedges. (2008). *The Status And Conservation Of Asian Elephants In The Seima Biodiversity Conservation Area, Cambodia*. FA/WCS.
- Sukumar, R. (1992). *The Asian Elephant: Ecology and Management*, 2nd edn. Cambridge University Press, Cambridge, UK





Produced by

General Directorate of Administration for Nature Conservation and Protection, Ministry of Environment

Supported by Fauna & Flora International (FFI)



INTERNATIONAL
ELEPHANT
FOUNDATION.ORG



ELEPHANT FAMILY
Protecting Adults, Empowering our Future Matriarchs

