

# Vulture Conservation Action Plan Myanmar (2019-2025)



**Myanmar Vulture Working Group (MVWG)**

**August 2019**



## **List of Contributors**

This Vulture Conservation Action Plan is the result of a consultation meeting on vulture conservation on 3<sup>rd</sup> April 2019, Naypyidaw with participation of representatives from the Ministry of Natural Resources and Environmental Conservation, Ministry of Agriculture, Livestock and Irrigation, General Administration Department of Shan and Kachin States, the Royal Society for the Protection of Birds, Myanmar Veterinary Council, Myanmar Veterinary Association, Wildlife Conservation Society (WCS), World Wildlife Fund (WWF), Fauna & Flora International (FFI), Myanmar Bird and Nature Society (MBNS), Friends of Wildlife (FoW), Biodiversity And Nature Conservation Association (BANCA) and other ornithologists of Myanmar.

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## **Acknowledgements**

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## Executive Summary

This updated Action Plan details the planned vulture conservation activities by the Myanmar Vulture Working Group (MVWG, comprising Nature Wildlife Conservation Division (NWCD), Biodiversity And Nature Conservation Association (BANCA), Fauna & Flora International (FFI), Wildlife Conservation Society (WCS), Friends of Wildlife (FOW), Myanmar Birds and Nature Society (MBNS) and World Wildlife Fund (WWF)). It is one of the outcomes of the Myanmar Vulture Conservation workshop held at the Royal Naypyitaw Hotel, Naypyitaw on 3<sup>rd</sup> April 2019. The workshop was funded by the Royal Society for the Protection of Birds (RSPB). Delegates to the workshop included the members of the Myanmar Vulture Working Group, representatives from the relevant government departments such as the General Administration Department and Livestock Breeding and Veterinary Department, and representatives from Myanmar Veterinary Association.

The objectives of the workshop were to raise awareness of the current status of vultures in Myanmar; to share international experience of the conservation of vultures led by SAVE and to update the previous vulture conservation action plan (2007-2020).

This new action plan states the most likely causes of the recent declines, the main threats to vultures in the wild, now and in the future, and a programme of action designed to prevent extinction and remove the causes of endangerment from the environment. There are three resident vultures in Myanmar; White-rumped Vulture *Gyps bengalensis*, Slender-billed Vulture *G. tenuirostris* and Red-headed Vulture *Sarcogyps calvus* (all Critically Endangered). In South Asia, the populations of *Gyps* vultures have undergone a dramatic decline as a result of a veterinary medicine (Diclofenac) used to treat domestic cattle. The principal threat to vulture populations in Myanmar is believed to be a limited food supply as a result of low wild ungulate populations and limited free-roaming domestic cattle. Other threats such as persecution, loss of nesting habitat, infectious diseases, and poisoning of food sources appear not to be as significant in Myanmar, but the emergence of diclofenac into markets in Myanmar is a potentially serious threat. Conservation needs can be divided into two main areas: research and direct conservation interventions. The principal focus for research is population estimation, investigation of ranging behavior, and location of nesting sites. Priority conservation interventions are to 1) to understand more Diclofenac use in veterinary practice in vulture distribution areas such as Indawgyi in Kachin and Nan San in Shan State and to raise awareness on the dangers of Diclofenac to vultures, 2) to propose first Vulture Safe Zone (VSZ) around Indawgyi Biosphere Reserve in Kachin State and 3) to establish a program for Vulture nesting sites surveys and protection of nesting sites.



Fig 1: Slender-billed Vulture in Indawgyi Biosphere Reserve, Kachin State, Photo: Ngwe Lwin/FFI

## 1. Introduction

Five of the 15 species of vultures were once quite common in mainland South-east Asia. However, all Asian vultures are now in decline and the White-rumped Vulture *Gyps bengalensis*, Indian Vulture *Gyps indicus*, Slender-billed Vulture *Gyps tenuirostris* and Red-headed Vulture *Sarcogyps calvus* have recently undergone the most rapid, extensive and catastrophic population declines. This has been most marked in India, Nepal and Pakistan over 20 years from the mid-1990s owing to accidental poisoning by diclofenac, a non-steroidal anti-inflammatory drug (NSAID), in domestic cattle carcasses. Those four species are now listed as globally “Critically Endangered” on the IUCN Red List, indicating a high risk of extinction in the near future. In 2009, the SAVE (Saving Asia’s Vultures from Extinction) Partnership was established to bring together organisations globally to more effectively address these declines. As the main cause of diclofenac poisoning is being addressed in South Asia, there is a global need to pay more attention to vultures in South East Asian countries where veterinary diclofenac is not generally used and relict but still declining populations of vultures occur.

Limited but important studies and conservation work has been undertaken in Myanmar in light of the decline of Asian vultures. In 2007 a first vulture conservation action plan was prepared in Myanmar. Previous survey records indicate that there is still a viable population left in Myanmar, although it is believed to be declining and the threats currently remain unclear. Nevertheless, in South-east Asia, Myanmar probably has the most significant vulture population. Therefore, in 2018, it was agreed to establish the Myanmar Vulture Working Group (MVWG) with Nature Wildlife Conservation Division (NWCD) of the Forest Department, Biodiversity And Nature Conservation Association (BANCA), Fauna & Flora International (FFI), Wildlife Conservation Society (WCS), Friends of Wildlife (FoW), Myanmar Birds and Nature Society (MBNS) and World Wildlife Fund (WWF) as founding partner organizations and chaired by BANCA. A Terms of Reference for the MVWG has been developed.



Fig 2: Red-headed Vulture in Nam Sam, Shan State Photo: Solo Mandalay

## 2. Ecology of Gyps Vulture

Gyps vultures are large-bodied (5-10 kg) birds adapted for economical soaring flight in up draughts and thermals. They feed on tissues from carcasses of large mammals located from the air, either by seeing the carcass itself or the responses of other vultures to it. They eat meat, offal and intestines but not stomach contents and can take sufficient food into the crop at one meal to last several days. They clean the environment by removing rotting animals, and thus bacteria, anthrax, and viral infections. They replace populations of feral dogs and rats, both of which spread disease (e.g., rabies) to humans and livestock. They are spectacular large birds and popular with tourists. They form monogamous pairs in which the sexes share the incubation and care of the young. Nests are on trees or cliffs and are colonial in some species.

Of the eight species of Gyps vultures worldwide, four species are found only in Asia (Oriental White-backed Vulture *G. bengalensis*, Long-billed Vulture *G. indicus*, Himalayan Griffon *G. himalayensis*, and Slender-billed Vulture *G. tenuirostris*), three are found exclusively in Africa (African White-backed Vulture *G. africanus*, Cape Griffon *G. coprotheres*, Rüppell's Griffon *G. rueppellii*) and one breeds in Eurasia but migrates into Africa and south Asia (Eurasian griffon *G. fulvus*). Geographical ranges of all Gyps species overlap to some extent with those of others in the same genus. Gyps vultures are typically widespread and abundant, accounting for the majority of individual vulture sightings in both Africa (c. 90%) and Asia (c. 99%). Their abundance in India is explained by the availability as food of domestic cattle and buffalo carcasses that are usually not consumed as meat for religious reasons. In some ecosystems, Gyps vultures feed predominantly on the carcasses of wild rather than domestic ungulates. For example, in the Serengeti, Tanzania, high population densities of Gyps are present and consume more than a quarter of the available ungulate carcasses.

All Gyps species range widely to forage and immatures disperse even more widely, and are more nomadic than adults. In some populations, *G. fulvus* juveniles appear to undergo large-scale annual migrations before settling into a resident breeding population.

Gyps species are long-lived; the maximum recorded life-span of *G. fulvus* in captivity is 37 years. They reach maturity at 4-6 years, and then produce one egg during each subsequent breeding season. Annual survival rates of large raptors are typically high (around 0.95; Newton 1979). In stable or increasing populations of Gyps vultures, documented adult survival rates are high. The breeding success of Gyps vultures varies among species, areas and years, but is usually in the range 0.5 to 1.0 fledglings per pair per year. Hence, in a stable population, only 10-20% of fledglings would be expected to survive to breeding age.

## 3. Role of Vultures in Ecosystems

Vultures have incredible ability to detoxify the bacterial matter from the carcasses and decomposing bodies they feed on due to low pH in their stomach, which kills bacteria along with most resistant spores. They also kill the bacteria attached on their legs during feeding the carcass by urination. These scavenger birds devour carcasses rapidly and efficiently and help in maintaining a clean environment for humans, livestock, and other wildlife free from infectious diseases (Markandya *et al.*, 2008). So, they are considered as 'Natural Cleaner'. As vultures decrease, an increase in uneaten livestock carcasses poses a direct threat to human and livestock health because the carrions provide a breeding ground for potentially pathogenic bacteria leading to the possibility of direct or indirect infections and are sources of disease, such as anthrax. In the absence of vultures, other secondary scavengers (dogs, jackals, hyenas, crows, eagles etc.) continue to play a role as primary scavengers, which may cause an ecological imbalance affecting different species including humans. The loss of vultures thus

contributes to the environmental pollution (of air, soil and water) leading to a potential increase in infectious diseases (Markandya *et al.*, 2008).

## **4. Review of population trends and conservation status of the endemic gyps vultures of Asia**

### **4.1. Indian subcontinent**

Until the early 1990s thousands of vultures scavenging in rubbish dumps and carcasses was a common sight in India and Pakistan. Their abundance in India was explained by the availability of domestic cattle and buffalo carcasses as food, which for religious reasons are usually not consumed as meat. Vultures performed an important function in South Asian ecosystems and provided services to humans, such as the reduction of potential health risks posed by decomposing livestock carcasses. A rapid decline was also seen in Nepal and other parts of south Asia. At first the reason for these declines was poorly understood, but later proved to be almost entirely due to veterinary usage of diclofenac (Green *et al.*, 2004). High levels of diclofenac were detected in Gyps vultures that had fed on carcasses of dead cattle treated with diclofenac, and were found dying as a result of renal failure and visceral gout.

Once the cause of the vulture declines was established, a set of conservation interventions took place focusing on two main areas: 1) banning veterinary use of diclofenac and identifying alternatives which are safe for vultures; 2) establishing a captive breeding programme as insurance against the risk of total extinction. In the meantime, the work has expanded to include testing other NSAIDs and establishing Vulture Safe Zones, which are landscape-level areas where efforts are focused to ensure no NSAIDs toxic to vultures remain in the environment. Since 2006, veterinary diclofenac has been progressively banned in India, Pakistan, Nepal and Bangladesh along with some other NSAIDs in some of those countries. In 2011, the Saving Asia's Vultures from Extinction (SAVE) Partnership was established to coordinate conservation efforts for vultures across South Asia and was soon expanded to include Cambodia. Captive breeding programmes have raised close to 700 vultures in captivity and since 2017, captive-bred vultures have started to be released in Nepal and are planned soon for India. All these efforts have led to a reversal in the decline in vulture populations in Nepal and there are signs that for some of the species in India the population is stabilising too. Nevertheless, the future of vultures in South Asia is still far from assured and the SAVE partnership continues to grow to address the threats to vultures, which still remain largely due to toxic NSAIDs.

### **4.2. South-east Asia**

Slender-billed and White-rumped Vultures were widely distributed across South-east Asia during the first half of the 20th century. Now both species are extinct across almost the entire area with only relict populations remaining in Myanmar, southern Laos and Cambodia. There are also a few records of Red-headed Vultures. Whereas the Long-billed Vulture is a South Asian endemic and was unlikely to have occurred in South Asia historically. Vulture numbers in Cambodia may have temporarily increased during the Khmer Rouge in the 1970's due to the abundance of human and livestock carcasses (Tan Setah pers. comm.). At present Thailand and Vietnam are believed to hold no viable populations of Gyps vultures. Remaining birds in South-east Asia appear to have low breeding success. There is insufficient data about breeding success or population structure of South-east Asian vulture populations to draw clear conclusions from about their status.

### 4.2.1 Myanmar

Vultures used to be quite common in Myanmar. Although most people over 50 years of age remember seeing vultures in many parts of the country, younger generations below that age, except for some communities living close to vulture colonies, have never seen vultures naturally throughout their life. They have seen them only in zoos and in captivity. They would not even know that Myanmar has significant population of vultures. Limited but important studies and conservation work have been undertaken in Myanmar in light of the decline of Asian vultures.

In 2003, vulture population and distribution surveys were conducted in Myanmar by BANCA and BirdLife International and recorded five species of vulture; White-rumped Vulture, Slender-billed Vulture, Red-headed Vulture, Cinereous Vulture *Aegyptius monachus* and Himalayan Griffon at 13 sites. Vulture surveys using vulture restaurants in 2006 recorded four species, which had all been recorded in previous surveys except the Cinereous Vulture which is very rare and a migrant species. In addition, threat assessments were also conducted on the veterinarian use of diclofenac on livestock in Shan, Kachin, Chin States and Sagaing Region. Vultures were confirmed to be widely distributed across approximately 126,705 sq miles; 34,379 sq miles in Kachin State, 13,907 sq miles in Chin State, 60,155 sq miles in Shan State and 18,264 sq miles in the upper Sagaing Region. Minimum population estimates were: 141 White-rumped Vultures, 49 Slender-billed Vultures, and 3 Red-headed Vultures. Himalayan Griffons were recorded as seasonal migrants. Although no nesting colonies were found during the surveys, reference to historical and current records and information gathered from the survey indicate that White-backed Vultures were known to be colonial nesters, and no information was collected on Slender-billed nor Red-headed Vultures. There was no evidence of any diclofenac use at that time. (Htin Hla et al., 2011)

In 2007, a workshop was held in Yangon to formulate a first Vulture Conservation Action for Plan Myanmar with multiple stakeholders from government, NGOs and INGOs.

Gyps vultures were surveyed again in 2010 by the Wildlife Conservation Society (WCS) to improve the accuracy of population estimates and monitor trends of threats. Nine white-rumped vulture nests were recorded in a cemetery at Dong Van village, north-east of Indawgyi Lake, close to Kamaing where there has been recent fighting.



Fig 3: The nesting site of White-rumped Vulture in the southern part of Hukaung Valley Wildlife Sanctuary (2011), Photo: Thet Zaw Naing (WCS)



Fig 4: The nest of White-rumped Vulture in Hukaung Valley Wildlife Sanctuary, Photo: Thet Zaw Naing

In 2015-16, Friends of Wildlife (FOW) implemented a project for conservation of vultures, which included vulture surveys and activities to change attitudes of some local communities toward vultures. It focused on two sites, one in Kachin State, ie Naung Kwin Inn near Indawgyi Lake and two villages in Shan State. The following table documents maximum counts at vulture restaurants;

Sites	White-rumped	Slender-billed	Red-headed	Himalayan griffon
Naung Kwin Inn, Kachin	61	9		70
Maing Yaw, Shan	40	9		11
Naung Phomae, Shan	51	13	3	6



Fig 5: Vulture restaurant activity in Naung Kwin Inn, near Indawgyi Wildlife Sanctuary, Kachin State, Photo: Friends of Wildlife (FoW)

The total population size of any species in Myanmar is unknown and may be relatively small if compared to populations in South Asia. But these populations have now become significant because of dramatic declines in neighbouring countries.

Three species: White-rumped vulture, Slender-billed vulture and Himalayan griffon are regularly recorded mainly in the northern part of the Indawgyi Biosphere Reserve during the Annual Waterbird Census and monthly waterbird count by Fauna & Flora International (FFI) and Indawgyi Wildlife Sanctuary, and birdwatching trips by visitors. Based on the census data, the population of all species is believed to have declined between 2001 and 2019.

All in all, although data remains patchy, vulture surveys in Myanmar indicate a continued decline in Gyps populations, and while threats remain to be understood, it is likely not due to diclofenac or other NSAIDs, but rather habitat loss and food limitation due to hunting of wild ungulates.

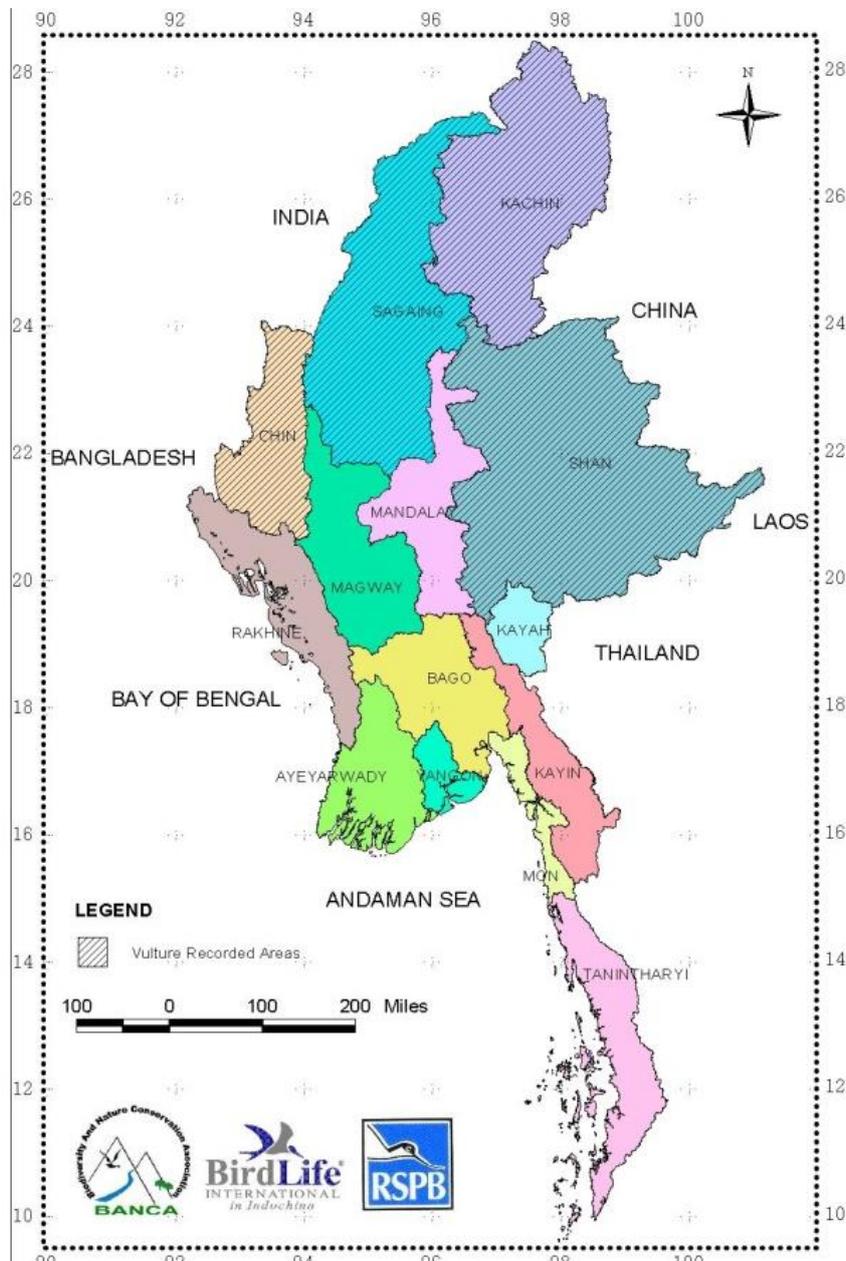


Fig 6. 2007 map showing vulture distribution in Myanmar, based on Htin Hla et al 2011. Recent records are confined to Kachin and Shan States

## 5. Threats

- **Reduced food availability (and limited information on the availability of food sources) for vultures.** In South Asia where the vulture crisis clearly occurred due to diclofenac, food availability is still argued as being an issue by a few individuals there. On the other hand, the consensus is that this is probably the main issue in Myanmar and food availability could further decline due to increased mechanisation of agriculture and demand for beef in China, both reducing carcasses of domestic cattle in the environment. This issue is similar for Cambodia.
- **Negative perceptions of Myanmar people to vultures.**  
It is generally, but not universally, believed that vultures are dirty or bring bad luck. Therefore, some people deliberately drive them away from their villages, particularly if they are nesting or roosting.
- **Lack or destruction of nesting trees.**  
Habitat loss should not be considered a threat to vultures, as conservationists are used to thinking for many other species. Vultures cover wide areas and generally don't require good forest, but do require food sources and nesting locations. The lack of appropriate nesting trees may be a limitation, especially if deliberately cut by people. Red-headed vultures use forests, but other species in Myanmar generally prefer open habitat loss, so forest loss isn't the issue for vulture conservation.
- **Trade in vultures and their parts.**  
Unlike in 2007 when the first vulture conservation action plan was compiled, there is now more evidence, albeit anecdotal, that trade in vultures and their parts is a threat. Main trade uses include pet trade and belief-based use (aka traditional medicine) especially to China. Trade is now being more driven by on-line demand, eg Himalayan griffons are known to be have been sold through social media in Thailand. Use of vulture bones for very expensive flutes in China has also been recorded.
- **Poisoning.**  
There is no evidence of vultures being poisoned by NSAIDs in Myanmar, but there is consensus that diclofenac is a serious potential threat. Notably this was not recognised as a threat in the 2007 action plan and rightly as only now are there reports of its sale for veterinary use, despite extensive pharmacy surveys in previous years. Poison baits are sometimes used against other wildlife in Myanmar, typically feral dogs and dhole and could pose a threat to vultures. Dhole numbers appear to have dropped considerably as a result of the practice especially in Chin State, which therefore means it is probably less used.
- **Shooting for pleasure.**  
Anecdotal evidence was given by several participants of militias shooting wildlife for fun and that in Chin State and Nagaland some ethnic groups have a culture of shooting for pleasure.
- **Weaknesses in law enforcement and regulations.**  
Although vultures are on the list of protected species in Myanmar, government awareness of the need for enforcement for vulture protection is considered to be low.

## 6. Action Plan

**Vision:** By 2025, the conservation status of Myanmar Vultures is fully understood and main distribution sites are secured.

### Objectives

1. To prevent the loss of nesting sites through direct protection
2. To raise awareness on the threats posed by some veterinary drugs
3. To ensure sufficient food availability for vultures
4. To ensure sufficient funding
5. To establish appropriate policy, laws and regulations and strengthen law enforcement
6. To monitor and research the vulture populations in Kachin and Shan States
7. To raise public awareness to change traditional belief and improve knowledge among multiple stakeholders
8. To protect key vulture population landscapes
9. To build capacity at national level to conserve and manage vultures

### Actions to be undertaken-

Objective	Activities	Responsible Agencies	Link to SAVE Blueprint (see annex1)
1. To prevent the loss of nesting sites through direct protection	- Awareness programmes with local communities in potential vulture areas.	- Forest Department - Environmental Conservation Department - Ministry of Education - Local NGOs/CSOs - INGOs - General Administration Department	MYA1
2. To raise awareness of the threats posed by some veterinary drugs	- Assess and evaluate threats posed by using veterinary drugs and propose appropriate actions. - Raise awareness of the main threat to vulture from using diclofenac and ketoprofen among the veterinary sector - Raise awareness among pharmacies, drug distributors, vets and farmers - Monitor availability and use of NSAIDs in Myanmar. - Find and promote alternative	- Livestock, Breeding and Veterinary Department - Forest Department - Myanmar Veterinary Council - Myanmar Veterinary Association - MLF	AD1, AD2, AD6, AD9

	treatments to diclofenac and other NSAIDs which are toxic to vultures.		
3. To ensure sufficient food availability for vultures	<ul style="list-style-type: none"> <li>- Establish restaurant sites</li> <li>- Protect wildlife especially ungulates</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- Local NGOs/CSOs</li> <li>- INGOs</li> </ul>	MYA3
4. To ensure sufficient funding	<ul style="list-style-type: none"> <li>- Develop stronger fundraising capacity.</li> <li>- Contact INGOs, NGOs and UN agencies</li> <li>- Get agreement from the respective Ministry</li> </ul>	<ul style="list-style-type: none"> <li>- NGOs</li> <li>- INGOs</li> </ul>	FR1
5. To establish appropriate policy, laws and regulations and strengthen law enforcement	<ul style="list-style-type: none"> <li>- Establish proper enforcement program</li> <li>- Advocacy meeting with related government departments and Parliament.</li> <li>- Establish cooperation between MVWG, government agencies and relevant private sector.</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- Ministry of Agriculture, Livestock, and Irrigation</li> <li>- Ministry of Health (FDA)</li> <li>- Zoo Department</li> <li>- Universities</li> </ul>	MYA5
6. To monitor and research the vulture populations in Kachin and Shan States vulture population in Kachin and Shan State	<ul style="list-style-type: none"> <li>- Baseline surveys to be carried out in 2019, methodology to be established.</li> <li>- Conduct vulture restaurant surveys</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- Universities</li> <li>- NGOs/CSOs</li> <li>- INGOs</li> <li>- Local communities</li> </ul>	ZM1, RM4
7. To raise public awareness to change traditional belief and improve knowledge among multiple stakeholders	<p><b>Social:</b></p> <ul style="list-style-type: none"> <li>- Identify indigenous knowledge and include public in conservation at all levels</li> <li>- Raise awareness through posters, video, and social media.</li> <li>- Training and workshop and education session including primary level students.</li> </ul> <p><b>Networking:</b></p> <ul style="list-style-type: none"> <li>- Promote responsible</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- Ministry of Education</li> <li>- Universities</li> <li>- NGOs/CSOs</li> <li>- INGOs</li> <li>- General Administration Department</li> <li>- Local communities</li> </ul>	MYA2

	<p>participation of community and CBOs/CSOs.</p> <ul style="list-style-type: none"> <li>- Establish and promote networking among like-minded organizations regionally.</li> </ul>		
<p>8. To protect key vulture population landscape.</p>	<ul style="list-style-type: none"> <li>- Establish Vulture Safe Zones centred on Indawgyi Lake, Kachin State and in Shan State.</li> <li>- Continue Vulture Safe Zone implementation and expansion.</li> <li>- Conducts surveys over representative areas of the zone, including nest counts and/or view point surveys as appropriate</li> <li>- Monitor Vulture Safe Zones for use of NSAIDs which are known to be toxic to vultures and make sure they are removed.</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- General Administration Department</li> <li>- Ministry of Agriculture, Livestock and Irrigation</li> <li>- NGOs, INGOs, CSOs, local communities.</li> </ul>	<p>VS18, VS19</p>
<p>9. To build capacity at national level to conserve and manage vultures</p>	<ul style="list-style-type: none"> <li>- Incorporate Asian Vulture as a priority species, setting conservation targets and activities within site level management plans for protected sites and areas such as Indawgyi Wildlife Sanctuary.</li> <li>- Sharing knowledge of vulture conservation in Asian countries.</li> </ul>	<ul style="list-style-type: none"> <li>- Forest Department</li> <li>- General Administration Department.</li> <li>- Ministry of Agriculture, Livestock and Irrigation</li> <li>- NGOs, INGOs, CSOs, local communities.</li> </ul>	

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For a comprehensive bibliography related to the vulture crisis in Asia visit [www.save-vultures.org](http://www.save-vultures.org)

## **Annex: Components of 2019 SAVE Blueprint related to this action plan and actions for Myanmar**

AD1 Achieve the removal from the market of vials of diclofenac supposedly intended for human medicine in excess of 3 ml capacity.

- Removal of diclofenac from the market and undercover survey for NSAIDs
- Propose restriction on large vials of diclofenac to government

AD2 Achieve the banning of the veterinary use of ketoprofen and aceclofenac in India, Pakistan, Bangladesh, Nepal, Bhutan, Cambodia & Myanmar

- Removal of ketoprofen and aceclofenac from the market
- Monitor availability and use of NSAIDs in Myanmar

AD6 Contribute, with government agencies and pharmaceutical companies, to maintaining pharmacovigilance and regulation of veterinary drugs, to prevent their negative effects on wild vultures.

- All: Initiate discussions with Regional Steering Committee, national committees, governments and pharmaceutical industry. Establish procedures

AD9 Develop wider awareness raising initiatives to highlight NSAIDs concerns and provide incentives acknowledgement of those taking positive steps

- Consider initiatives generating awareness with pharmacies, drug distributors, vets, farmers

Action plan objective 2: to eliminate the threat posed by drugs and chemicals

VS18 Identify pVSZs in Myanmar

- Collect information and select sites for pVSZs

VS19 Maintenance & review of VSZs in Myanmar

- Continue VSZ implementation and expansion. [Fundraising required to support, in process]. Review in 2022/2023

Action plan objective 8. To protect key vulture population landscape

ZM1 Monitoring movements, survival and causes of death of wild vultures with GPS PTTs in pVSZs and VSZs

- Initiate monitoring with tagging as option in future

Action plan objective 6. To monitor and research vulture population in Kachin and Shan State

RM4 Vulture population monitoring in Pakistan, Bangladesh, Cambodia and Myanmar.

- baseline survey to be carried out in 2019, methodology to be established

Action plan objective 6. To monitor and research vulture population in Kachin and Shan State

FR1 Develop stronger fundraising capacity

Action plan objective 4 To ensure sufficient funding

The following are all specific actions for Myanmar:

MYA1 Nesting site protection and law enforcement

- 2019: Start with one of the three key nesting sites in 2019

Action plan objective 1. To prevent the loss of nesting sites

#### MYA2 Public awareness through social media

- Start in 2019 at one site with local community and social media at national level. Will also work through zoo – e.g. vulture awareness day.

Action plan objective 7. To increase public awareness to change traditional belief and improve knowledge among multiple stake holders

#### MYA3 Restaurant site for environmental tourism

- One site to start within 2019 – twice per year. No budget for this but will try and increase interest.

Action plan objective 3. To ensure food availability for vultures

#### MYA4 Threat assessment

- Questionnaires, focus group discussion at one site.

Partially covered by objective 2. To eliminate the threat posed by drugs and chemicals

Doesn't cover the other potential threats identified in the action plan. These can be considered during vulture surveys under objective 6

#### MYA5 Update Myanmar vulture species action plan

- Plan to be updated and aligned with SAVE blueprint and Vulture MSAP

Action plan objective 5. To establish proper policy, law, regulation and strengthen law enforcement