Conservation of Asian Vulture in Myanmar

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Biodiversity And Nature Conservation Association (BANCA)

Report summited to Naturschutzbund Deutschland (NABU)

Contents

Acknowledgement

We are extremely grateful to the Naturschutzbund Deutschland (NABU), Germany for providing the funding to promote the vulture conservation activities in southern and northern Shan state, Myanmar. We greatly appreciate the Community Based Organisation members from Hai – pak Nature Conservation Association and professional ornithologists from Myanmar Vulture Working Group (MVWG), who kindly conducted the field survey in difficult times and provided information on vultures and photographs to use in the report.

1. Introduction

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 *Gyps bengalensis*, Slender-billed Vulture *Gyps tenuirostris*, Red-headed Vulture *Sarcogyps calvus*, Cinereous Vulture *Aegypius monachus* and Himalayan Griffon *Gyps himalayensis* 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. 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.

In 2020, BANCA and FFI implemented comprehensively population and distribution survey in Kachin State but BANCA conducted just present/absent survey of vulture in southern Shan State due to budget limitation. The southern Shan State survey using the similar method of Kachin State will be conducted in this time comprehensively.

Three species: White-rumped vulture, Slender-billed vulture and Himalayan griffon are regularly recorded mainly in the northern part of the Indawgyi Biosphere Reserve. Based on the census data, the population of all species is believed to have declined between 2001 and 2020.

All in all, although data remains patchy, vulture surveys in Myanmar indicated 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.

The conservation will not be successful without participation of local communities and the local conservation groups lie at the heart of the strategy of BANCA for long term conservation of vulture conservation in Shan state. Therefore, BANCA has initiated Local Conservation Group in 2020 at Hai-pak village, Namsang township, south Shan state. This project will upgrade the LCG to the formulating of the Community Based Organization (CBO) in southern Shan state and collaborated with the local people to conduct the distribution and population survey at Hsipaw and Lashio townships in northern Shan state, in May 2021. This project enabled BANCA to strengthen the capacity of CBO in liaising with local communities and monitoring the vulture in southern Shan state in December 2021.

2. Objectives

- To monitor the populations and distribution of vulture species and assess the threats in Shan State.
- To raise education awareness activities on the value of biodiversity conservation and status of vulture throughout in Myanmar.
- To develop the capacity of the community based organization in community outreach and monitoring vultures in southern Shan state.

3. Methodology

3.1.Project areas

BANCA conducted the conservation of vulture species in both northern and southern Shan state, Myanmar. Shan State is a state of Myanma and borders China to the north, Thailand and Laos to the east, and Thailand to the south. The area of the project area (north and south Shan state) is a combination of hill ranges, steep river valleys and a few elevated plains. The *Shan* Hills also known

as *Shan* Highland, is a vast mountainous zone that extends through Yunnan to *Myanmar* and Thailand. Its inhabitants belong to different ethnic groups such as Palaung, Wa, Chinese, Shan and Kachin people. (Fig – 1).

North Shan state: The distribution and population survey at nine study point in Lashio and Hsipaw township, northern Shan state in May 2021. Lashio and Hsipaw are famous by its natural resources and close to the south Shan state.

South Shan state: The areas were selected to be suitable areas on based the local information of previous survey in southern Shan state. And, Gyps vulture's nest was searched at two areas in Nam sang township, where recorded the vulture nests by the local villagers, southern Shan state. Furthermore, we made the conservation activities such as environmental awareness talks and standing signboard and gave a lecture to the members of CBO on bird watching and awareness training at the Hai – pak village in Nam sang township, southern Shan state.

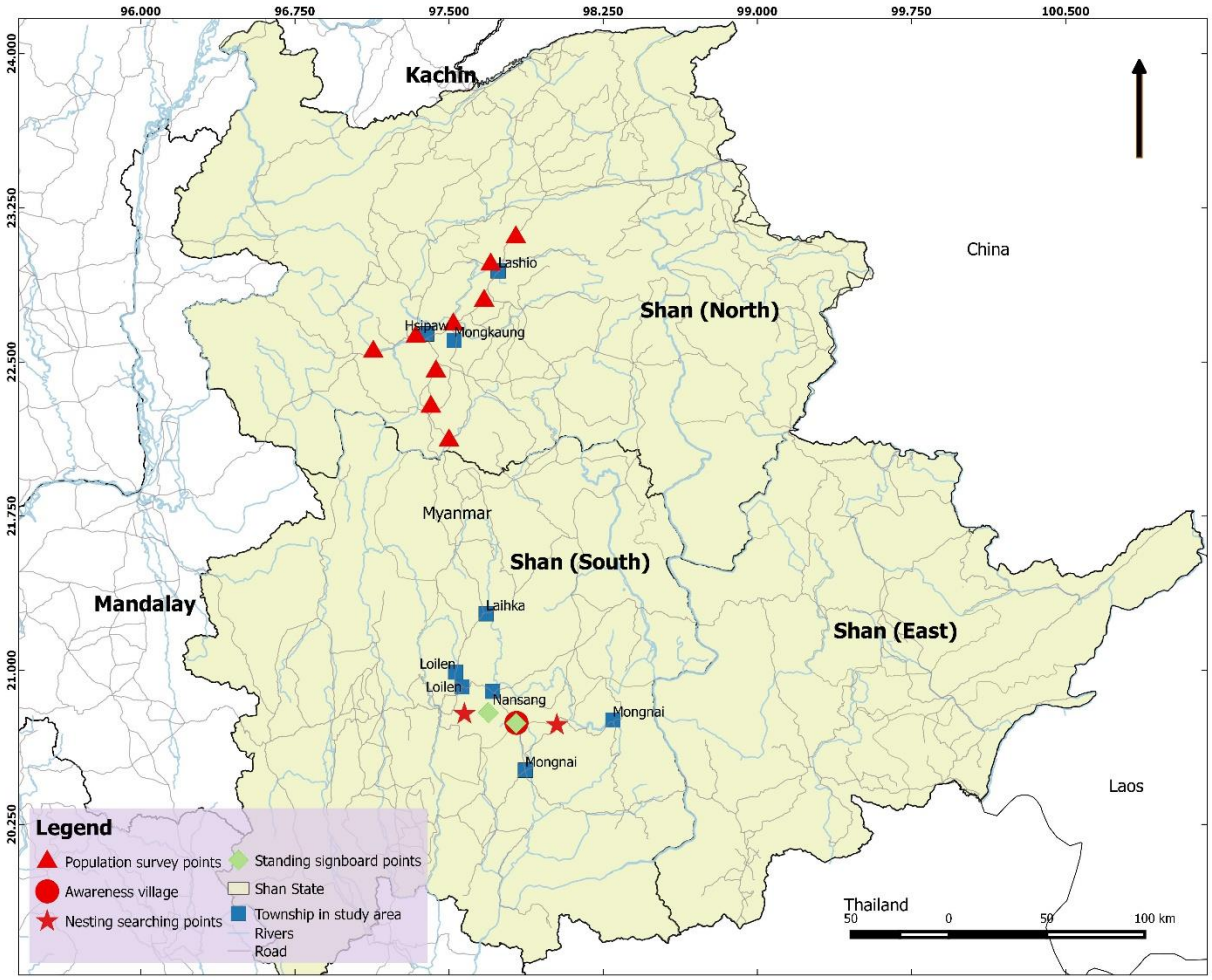

Fig – 1: Implementing the vulture population survey and its conservation activities in southern and northern Shan state

3.2.Participant List and Survey Itinerary

1). U Aung Kyaw Nyunt	-	Education and livelihood manager	- BANCA
2). U Aung Myint Oo	-	Operation manager	- BANCA
3). U Lay Win	-	Ornithologist	- MBNS
4). U Thaw Phyo Shwe	-	Field coordinator	- BANCA
5). U Myat Win	-	Chairman of CBO	- Hai – pak village
6). U Thein Maung	-	Local guide	

Note: MBNS- Myanmar Bird and Nature Society.

Table 1: Itinerary of Vulture population survey in northern Shan State, May 2021

Day	Date	Activities	Overnight
1	4.5.2021	Surveyed at Point-1, 2, 3 at Hsipaw Township	Hsipaw
2	5.5.2021	Surveyed at Point-1, 2, 3 at Hsipaw Township	Hsipaw
3	6.5.2021	Surveyed at Point-1, 2, 3 at Hsipaw Township	Hsipaw
4	7.5.2021	Surveyed at Point-1, 2, 3 at Hsipaw Township	Hsipaw
5	8.5.2021	Surveyed at Point-1, 2, 3 at Hsipaw Township	Hsipaw
6	9.5.2021	Surveyed at Point-4, 5, 6 at Lashio Township	Lashio
7	10.5.2021	Surveyed at Point-4, 5, 6 at Lashio Township	Lashio
8	11.5.2021	Surveyed at Point-4, 5, 6 at Lashio Township	Lashio
9	12.5.2021	Surveyed at Point-4, 5, 6 at Lashio Township	Lashio
10	13.5.2021	Surveyed at Point-4, 5, 6 at Lashio Township	Lashio
11	14.5.2021	Surveyed at Point-7, 8, 9 at Hsipaw Township	Lashio
12	15.5.2021	Surveyed at Point-7, 8, 9 at Hsipaw Township	Hsipaw
13	16.5.2021	Surveyed at Point-7, 8, 9 at Hsipaw Township	Hsipaw
14	17.5.2021	Surveyed at Point-7, 8, 9 at Hsipaw Township	Hsipaw
15	18.5.2021	Surveyed at Point-7, 8, 9 at Hsipaw Township	Hsipaw

Table 2: Itinerary of education awareness activities in southern Shan State, December 2021

No.	Date	Activities	Overnight
1	12.12.2021	Travelled from Yangon to Taungyi in southern Shan state	Taungyi
2	13.12.2021	Travelled from Taungyi to Nam sang township	Nam sang
3	14.12.2021	Discussed the activities plan with LCG and met with village - headers and township officer in Nam sang	Nam sang

No.	Date	Activities	Overnight
		Prepared the conservation awareness event and printed the signboard vinyl materials	
4	15.12.2021	Made the conservation wareness activities at Hai - pak village	Nam sang
5	16.12.2021	Gave the CEPA training to LCG members	Nam sang
6	17.12.2021	Made a lecture on bird watching training and standed the signboard at Hai - pak village	Nam sang
7	18.12.2021	Field practiced the bird watching	Nam sang
8	19.12.2021	Conducted the nest searching	Nam sang
9	20.12.2021	Field practiced the bird watching	Nam sang
10	21.12.2-21	Conducted the nest searching	Nam sang
11	22.12.2021	Travelled from Nam sang to Kalaw township in southern Shan state	Kalaw
12	23.12.2021	Travelled from Kalaw to Yangon	Yangon

3.3.Methodology

Monitoring activities: We collected the local information of vulture sighting while we conducted the vulture survey in southern Shan state, Nam sang, Loilem, Hko lam, Mongkung and Lihkhe in 2020. According the information, we selected the two township, Lashio and Hsipaw, are possible landscape and route for vulture species moving in between the southern and northern Shan state. And, we carried out an occupancy survey with the viewpoint transect method by car. We made a distance at 20 kilometers apart each point to coverage the suitable habitat and visited the study sites with five times to detect the species in daytime between 09:00 am to 14:00pm. We monitored the vulture at each points for 60 minutes to records the information of sample sites such as weather, forest type, ground vegetation and vulture data with number of adults, sub – adults, juvenile, their behavior, sighting time, moving direction, distance and bearing form surveyors. The survey was done in a total of 9 points and each point was studied at five days, five different hours to avoid the same time repeatedly. The geographic coordinates for each point were documented using hand-held Global Positioning System – Garmin 64s and Garmin 62s. We took the photos with Samsung (Galaxy S3) telephone handset camera and used the Binoculars (Eagle Optic & Bushnell) for visual sighting and references a field guide book from Robson, C. 2011, A Field Guide to the Birds of South-East Asia.

Furthermore, interview with local people were conducted near survey viewpoints to find out the information on population, nesting and threats of vulture. In third wave of covid – 19, the LCG members informed and sent the monthly vulture recorded list by using online platform. For nesting, we collected the local information and searched the vulture nests at the old recorded sites in Nam sang township with LCG members.

Conservation activities: BANCA organized the village meeting at Hai – pak village tract to address the effective values of forming the community based organisation for long – term conservation the

vulture and its environments at Hai – pak village in Nam sang township, southern Shan state. Because the Hai – pak village track is one of the key vulture strongholds in southern Shan state. After meeting, twenty villagers from different villages (members of LCG) formed the community based organization (CBO) and expressed their interest to involve in vulture conservation in southern Shan state.

On 13th December, BANCA collaborated with the CBO members and made contact with the village header of Hai – pak village tract to invite the officers from Nam sang township, sub – village headers and villagers to do the vulture conservation awareness activities at Hai – pak village in Nam sang township. We prepared the invitation letters, event place, presentation and checked the materials (projector, sound box, camera, GPS, phone and generator). When we conducted the awareness activities with the local people, we made the social distancing or so 50 persons and handed out the surgical mask and hand sanitizing to participants.

4. Results

4.1.The status of vulture observation

Totally 9 viewpoints were studied in two townships, Hsipaw and Lashio, northern Shan state. None of any vulture was recorded during the survey period. However, we got the information from local villager that he saw at least five unidentified vultures around the viewpoint no. 9 near Man Li village at Hsipaw township where is closed to Mongkung township in 2020. And, 16 White – rumped Vultures were recorded at Mongkung township by the local bird watchers on 25th May 2021. Mostly, the agriculture land and degraded forest size are wide range at the survey sites in northern Shan state.

According the CBO reports, they have recorded two resident vulture species such as White – rumped Vulture and Slender – billed Vulture at the cow cemetery in the north part of Hai – pak village and Nawng pho mae village, southern Shan state. (see the table – 3).

Table 3: Recorded the vulture species by CBO members in Nam sang township, southern Shan state

No.	Month	Time	Villages name	No. of population	Behavior	Place
1	3-Jun-21	7:45	Hai - pak village	35	Eating the scavengers	At cow cemetery in north - part of Hai - pak village
2	6-Jun-21	-	Nawng pho mae village	45	Eating the scavengers	At cow cemetery in Nawng pho mae village
3	13-Jun-21	11:11	Hai - pak village	7	Soaring	At monestry in east - part of Hai - pak village
4	20-Jun-21	12:34	Hai - pak village	12	Eating the scavengers	At cow cemetery in north - part of Hai - pak village

No.	Month	Time	Villages name	No. of population	Behavior	Place
5	8-Aug-21	3:25	Hai - pak village	10	Eating the scavengers	At cow cemetery in north - part of Hai - pak village
6	17-Dec-21	10:32	Hai - pak village	1	Soaring	At Hai - pak village
7	2-Jan-22	1:10	Hai - pak village	4	Soaring	At Hai - pak village
8	5-Jan-22	1:15	Hai - pak village	34	Eating the scavengers	At cow cemetery in north - part of Hai - pak village
9	27-Jan-22	17:45	Hai - pak village	19	Soaring	At Hai - pak village
10	28-Jan-22	12:02	Hai - pak village	51	Soaring	At east - part of Hai - pak village

Table 3 shows that if the cemetery has dead cows, higher number of vulture species (White-rumped Vulture, Slender-billed Vulture and Himalayan Griffon) were restaurant and normally the vulture have soared for checking the dead animals at Nam sang township in southern Shan state.

Due to limited the survey days, we did not find out the nesting sites in Mongnai and Kyaing Taung, in southeast, and southwest of Nam sang township. However, we got the information on vulture nesting sites from the villagers that they have recorded it in 2020 at near the 10 Quarter village and Nawng pho mae village, where most of the local people are Gorkha ethnic, in Nam sang township, southern Shan state.

4.2.Constitution the community – based organization

BANCA have kept in touch with LCG members by calling and zoom meeting how to do the research and conservation activities for vulture species in southern Shan state in covid – 19. Some members were as a local guide and knew the vulture species while we conducted the distribution and population survey in southern Shan state in 2020. After we formed the Local Conservation Group, they can record the vulture status in their village tract even though they can't identify the vulture species. Therefore, BANCA facilitated the registration of the Local Conservation Group as a community-based organization, named Hai-pak Nature Conservation Association to get official in state level. Its main objectives are to conserve biodiversity and nature in the long term, and to stimulate and promote awareness raising about environmental conservation to the public and other organizations. The organisation has four guardians and twelve members working to conserve the biodiversity at Hai-pak village.

In addition, BANCA gave a lecture on CEPA training to the members on biodiversity and its ecosystem services, monitoring is importance for wildlife, conservation the vulture status in Myanmar and conservation value of biodiversity and its environment to local development. And, explained the CBO constitution, its goals and progress the conservation activities in future.

Furthermore, basic bird watching training was given to several members who are interested in bird counting and patrolling activities in future. We conducted three days' bird watching training with both

lectures and field practice during the training. The first day started the lectures at 9:00 and conducted the field practices at four hours in morning and three hours in evening. They wrote down the bird list and habitats and called three times the recorded species name to recognize the bird species.

4.3.Conservation Awareness Activities

On 15th December 2021, we delivered a speech on the status of vultures in Shan state and throughout Myanmar, the critical value of vulture in environment, the main threats for the decline of vulture species such as NSAIDs with Diclofenac, shortage the food sources and habitat loss. Totally forty – one villagers from different villages joined and discussed on forming the CBO and effective the conservation impact to local development. After the event, they highly interested in vulture conservation and recommended to us for more lecturing an awareness activity on biodiversity and environmental conservation. Furthermore, we made education awareness and a speech on biodiversity conservation and the ecological value of vulture species in environment at the high – school of Hai – pak village.

Additional awareness activities included handing out pamphlets and booklets to audiences to promote the vultures as natural cleansers of the environment and the alternative drugs (Meloxicam) that are safe for vulture species. The project displayed 4 standing signboards in front of the school and in Hai – pak village, southern Shan state.

5. Conclusion & Discussion

Compiling the survey results, we did not record the vulture species at Hsipaw and Lashio in northern Shan state except the local information records, in May. It is assumed that the survey month is breeding season for vulture species which both sexes share all the duties equally including incubation and care of the young and not soaring flight. (Vibhu Prakash et al. 2012). According the local information, the species have been recorded at Mong yai, Mong htaung, Mong shoae and Hsipaw township in northern Shan state within three year ago. Possibly, northern Shan state is landscape and route for the species moving in between the two states of Kachin and southern Shan state. Basically, we can identify the vulture sites in southern Shan state that is based on the survey results in 2020 (see the table - 4) and monthly report of CBO even though we can't analyze with observation data for population because the species detection is very limited due to the different survey time in southern and northern Shan state.
According to villagers, we found the old vulture nests but it is no longer in use because of the food shortage, human settlement, disturbance the nesting tree and conversion into agricultural land at the 10 Quarter village and Nawng pho mae village in Nam sang township.

Table 4: Show the vulture distribution sites in southern Shan state in 2020.

No.	Coordinate		Near township name	Recorded species name	Total	Habitat
	Latitude	Longitude				
1	20.74383	97.82811	Nam sang	White-rumped Vulture	1	Agriculture land
2	21.07325	98.03836	Nam sang	White-rumped Vulture	4	Agriculture land, Forest
				Slender-billed Vulture	3	
3	21.31414	97.66072	Lai hka	White-rumped Vulture	12	Agriculture land
4	20.79550	97.65508	Nam sang	White-rumped Vulture	22	Agriculture land, scrub land, plantation
				Slender-billed Vulture	3	
5	21.01936	97.99000	Nam sang	White-rumped Vulture	1	Scrub land, other plantation
6	20.92189	97.81383	Nam sang	White-rumped Vulture	3	Scrub land, other plantation
7	20.92189	97.81383	Mongkung	White-rumped Vulture	16	Agriculture land

The members of CBO can monitor the vulture observation in Hai – pak village and its surrounded area by monthly and actively interested in vulture conservation activities in Shan state. It is great opportunities for local engagement in conservation of vulture in Myanmar. However, they need to understand the constitution of a community – based organization and hold firm to carry out the biodiversity and environmental conservation works at Hai – pak village in Nam sang township, southern Shan state.

We introduced education awareness activities on the value of bird and biodiversity and environmental conservation to local people and young generations at Hai – pak village in Nam sang township. They are aware the ecological value of vultures and biodiversity conservation is principle for their future. Therefore, we raise the CEPA programs at the vulture recorded villages to change the traditional belief and improve knowledge among the multiple stakeholders in southern and northern Shan state.

6. Recommendation

Population and nesting survey: An extensive population survey should be conducted more than one season in Shan state (south & north) and Kachin state to determine the vulture's geographic ranges and population size, identify the first potential vulture safe – zones in Myanmar and protect the all key vulture landscapes in Myanmar. We must monitor the vulture nesting survey in breeding season and protect the vulture nesting areas in southern and northern Shan state. Interview survey

on vulture sightings at the potential area and other regions (Chin (Naga range), northern Sagaing, Ayeyawaddy (Kachin – kathar), Chin dwin area).

Vulture Safe Zone: Collecting information and site selection should be conducted in Kachin and south Shan state where the vultures have been recorded. After that, designation of Vulture safe zones in potential areas Kachin and south Shan state should be carried out through meeting / workshop on Vulture Safe zonation and zone management with the relevant government and representative of ethnic leader.

Community – based organization: We support to CBO for providing a powerful skill set in awareness of vulture conservation to educate the local villagers so that people can get rid of negative perception on vulture species. Moreover, we need to prepare and provide awareness material to CBO to conduct community outreach programme at the villages to raise awareness on value of vulture on ecosystem services and to reduce negative perception on vulture. In addition, we need to provide organization development training, strengthen the capacity training and field equipment such as binoculars, GPS, cameras, field guide book, give the opportunities to engage them in the research for vulture conservation programs in Myanmar.

Raising awareness activities: More standing signboard and promoting the CEAP programs at the vulture recorded villages in northern and southern Shan state.

Supplementary feeding sites: BANCA recorded the facing on threats for vultures' species are scavenges on ungulates carcasses are limited. It is needed to create supplementary feeding site to prevent vultures from starving to death as well as safe from the danger toxic drugs.That is why vulture restaurants are so important as there is not enough food out there for vultures to rely on for natural feeding.

7. References

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4). Sai Sein Lin Oo, Nang Lao Kham, Kyaw Myo Naing & Swen C. Renner, some recent evidence of the presence of the Critically Endangered Gyps vulture populations in northern Shan state, Myanmar. 26 August 2019.

5). Vibhu Prakash et al. 2012, working manual of vulture conservation breeding program by BNHS.

Annex: Recorded Photos

Vulture habitat sites photos

Plate - 1: Vulture habitat in Hsipaw Township, northern Shan state

Plate – 2: Vulture habitat in Laisho Township, northern Shan state

Vulture recorded photos

Plate – 3: Recorded the vulture species in Nam sang township, southern Shan state by CBO members

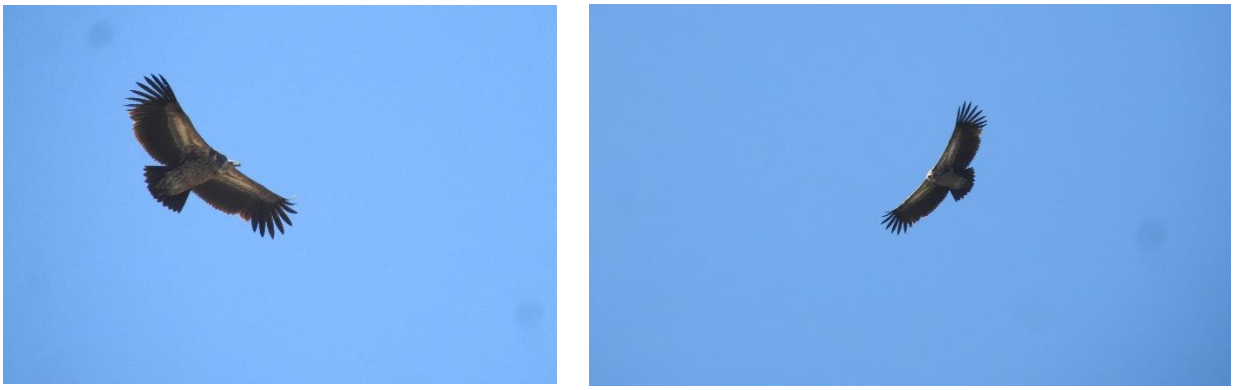

Plate – 4: Recorded the vulture species at Hai – pak village at bird watching training

Recorded the Vulture species note photos

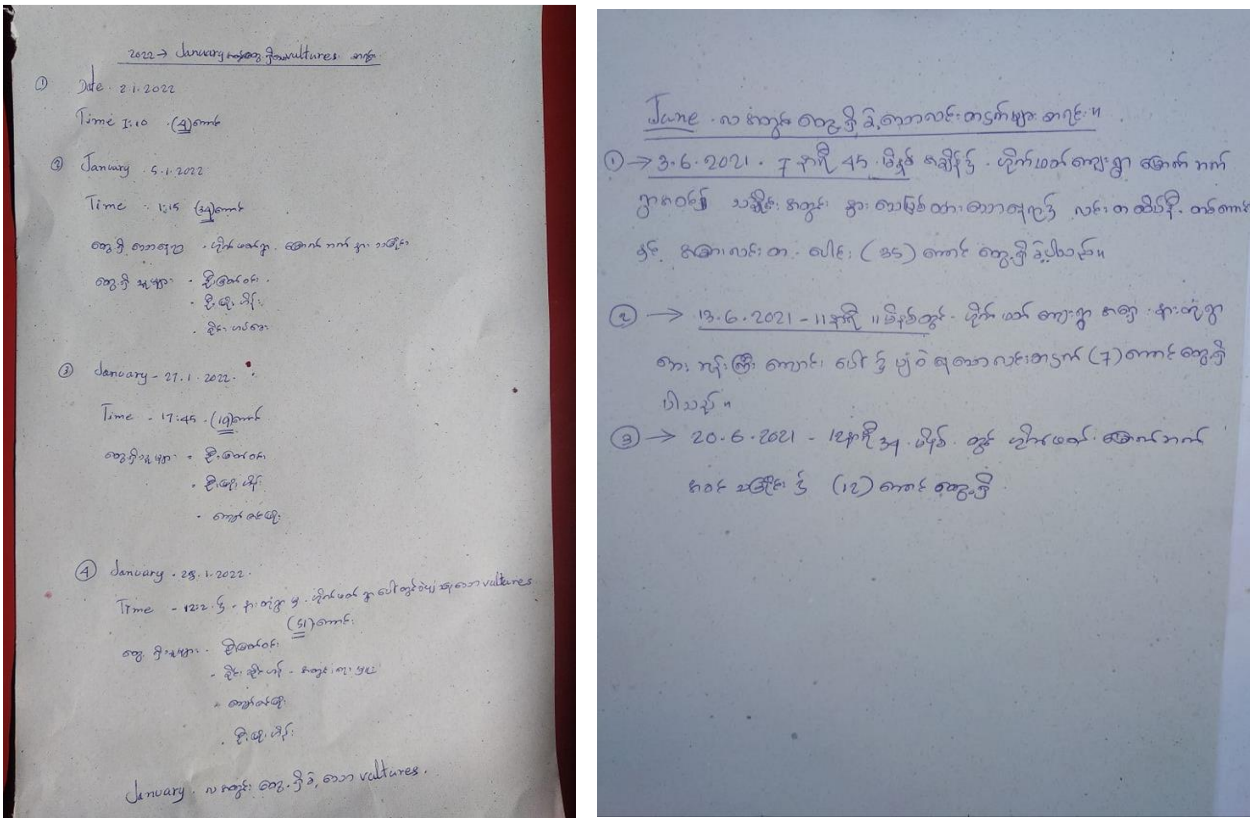

Plate – 5: Note down photos on recorded the vulture species by CBO at Hai – pak village in Nam sang Tsp

Pamphlets, booklets and vinyl photos

Plate – 6: Front & back side of vulture species and its conservation status

Plate – 7: Education awareness on veterinary drugs for diclofenac & other NSAIDs (Front, back & middle pages)

Flunixin (ဖလူးနက်(စ်)ဆန်(စ်))

Flunixinဆေးထိုးထားသော အိမ်မွေးတိရစ္ဆာန် အသေကောင်များကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်၏ ကျောက်ကပ်နှင့် ဝမ်းတွင်းကလီစာများ ပျက်စီးသွားပြီး အချိန်တိုအတွင်း သေဆုံးစေနိုင်သော ဆေးတစ်မျိုးဖြစ်ပါသည်။ Flunixin သည် Diclofenac ဆေးကဲ့သို့ပင် လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များကို သေစေနိုင်သောကြောင့် အိမ်မွေးတိရစ္ဆာန်များတွင် လုံးဝအသုံးမပြုရန် တားမြစ်ထားသော အကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။
(Cuthbert et al., 2007)

Nimesulide (နစ်မက်(စ်)ဆူလစ်(ဒ်))

Nimesulide အကိုက်အခဲပျောက်ဆေး ထိုးထားသော အိမ်မွေးတိရစ္ဆာန် အသေကောင်များကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်၏ ကျောက်ကပ်နှင့် ဝမ်းတွင်းကလီစာများ ပျက်စီးသွားပြီး အချိန်တိုအတွင်း သေဆုံးစေနိုင်သော ဆေးတစ်မျိုးဖြစ်ပါသည်။ Nimesulide သည် Diclofenac ဆေးကဲ့သို့ပင် လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များကို သေစေနိုင်သောကြောင့် အိမ်မွေး တိရစ္ဆာန်များတွင် လုံးဝအသုံးမပြုရန် တားမြစ်ထားသောအကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။
(Cuthbert et al.,2016), SAVE: NSAID – Alert – Symposium -2016.

လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များအတွက် အဆိပ်ဖြစ်စေသောဆေးဝါးများ။

ထိုအကိုက်အခဲပျောက်ဆေးများ ထိုးထားသော အိမ်မွေးတိရစ္ဆာန်များ သေဆုံးသောအခါ ၎င်းတို့၏ ဝမ်းတွင်းကလီစာများနှင့် အသားများ လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက (၃၆) နာရီအတွင်း ကျောက်ကပ်နှင့်အတူ အခြားဝမ်းတွင်းရှိ ကလီစာများ ပျက်စီးသွားပြီး အချိန်တို အတွင်း သေဆုံးလျက်ရှိပါသည်။
လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ အများဆုံးနေထိုင်ကျက်စားရာ အာရှတိုက်ရှိ နိုင်ငံများတွင် လင်းတဉ်အကောင်ရေများ လျော့နည်းကျဆင်းရခြင်း၏ အဓိကအကြောင်းအရင်းမှာ Diclofenac အကိုက်အခဲပျောက်ဆေးများကို အိမ်မွေးတိရစ္ဆာန်များတွင် အသုံးပြုမှုကြောင့်ဟု သုတေသန လေ့လာချက်များအရ သိရှိရပါသည်။

Flunixin ဆေးထိုးထားသော တိရစ္ဆာန်အသေကောင်ကို စားသုံးမိသော လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်၏ ပျက်စီးသွားသော ဝမ်းတွင်းကလီစာများပုံ။

Diclofenac အကိုက်အခဲပျောက်ဆေးသည် မျိုးသုဉ်းလုနီးပါးအန္တရာယ်ရှိသော လင်းတဉ်ကဲ့သို့သော မျိုးစိတ် သာမက အခြားမျိုးရင်းတူ ငှက်မျိုးစိတ်များ ဖြစ်သည့် သိမ်းငှက်မျိုးစိတ်များ၊ လင်းယုန်မျိုးစိတ်များ နှင့် ဓွန်မျိုးစိတ်တို့ကိုလည်း အသက်အန္တရာယ်ပေးသော ဆေးတစ်မျိုး ဖြစ်ပါသည်။

ကမ္ဘာပေါ်ရှိ လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များအား သေဆုံးသည်အထိ ဆိုးကျိုးပေးနေသော Non-steroid anti-inflammatory drug (NSAID) အုပ်စုဝင် ဆေးများအကြောင်း။

ကမ္ဘာပေါ်ရှိ အိမ်မွေးတိရစ္ဆာန်များတွင် အသုံးပြုနေသော အကိုက်အခဲ ပျောက်ဆေးများမှ လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များအပေါ် အကျိုးသက်ရောက်မှုတို့ကို လေ့လာသော သုတေသနပညာရှင်များ၏ လေ့လာတွေ့ရှိချက်များအရ အောက်ဖော်ပြပါ Non-steroid anti-inflammatory drug (NSAID) ဆေးအုပ်စုဝင် အကိုက်အခဲပျောက်ဆေးများကြောင့် အာရှတိုက်ရှိ လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်အကောင်အရေများမှာ (၉၀%) ခန့် လျော့နည်း ကျဆင်းလျက် ရှိပါသည်။

Diclofenac (ဒိုင်ကလိုဖန်းနက်)

Diclofenac သည် အိမ်မွေးတိရစ္ဆာန်များတွင် ဖြစ်တတ်သော ရောဂါများကို ကုသရာတွင် အသုံးပြုသော အကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။ Diclofenac ဆေးထိုးထားသော အိမ်မွေး တိရစ္ဆာန် အသေကောင်တို့ကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက စားသုံးပြီး (၃၆) နာရီအတွင်း လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်၏ ကျောက်ကပ်နှင့် ဝမ်းတွင်းကလီစာများ ပျက်စီးသွားပြီး အချိန်တိုအတွင်း သေဆုံးသွားလျက် ရှိပါသည်။ ကမ္ဘာပေါ်တွင် Diclofenac ဆေးကြောင့် လင်းတဉ်ကဲ့သို့သော မျိုးစိတ် အများအပြား သေဆုံးလျက်ရှိပြီး ငှက်အကောင်ရေများမှာ အလွန်အမင်း လျော့နည်းကျဆင်းလျက် ရှိပါသည်။
ထို့ကြောင့် အာရှတိုက်ရှိ အိမ်မွေးတိရစ္ဆာန် ပေါများသော နိုင်ငံများတွင် Diclofenac ဆေးထုတ်လုပ်မှု၊ ရောင်းချမှုနှင့် သုံးစွဲမှုများကို တားမြစ်ထားလျက် ရှိပါသည်။
(Oaks et al., 2004), SAVE: NSAID – Alert – Symposium -2016.

Aceclofenac (အေစီကလိုဖီးနက်)

Aceclofenac အကိုက်အခဲပျောက်ဆေး ထိုးထားသော အိမ်မွေးတိရစ္ဆာန်များတွင် Aceclofenac ဆေး၏ အာနိသင်သည် ဆေးထိုးပြီး (၂) နာရီခန့်တွင် Diclofenac (၅၀%) အသွင်အဖြစ် သွေးရည်ကြည်ထဲတွင် ပြောင်းလဲသွားပါသည်။ Aceclofenac ဆေးထိုးထားသော အိမ်မွေး တိရစ္ဆာန် အသေကောင်ကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ၏ ဝမ်းတွင်းကလီစာများ ပျက်စီးသွားပြီး အချိန်တိုအတွင်း သေဆုံးသွားလျက် ရှိပါသည်။
Aceclofenac သည် Diclofenac ဆေးကဲ့သို့ တားမြစ်ထားသော အကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။
(Galligan et al., 2016) , SAVE: NSAID – Alert – Symposium -2016.

Ketoprofen (ကီတိုပရိုဖန်)

Ketoprofen ဆေးထိုးထားသော အိမ်မွေးတိရစ္ဆာန် အသေကောင်များကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက (၄၈) နာရီအတွင်း လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ၏ ကျောက်ကပ်နှင့် ဝမ်းတွင်းကလီစာများ ပျက်စီးသွားပြီး အချိန်တိုအတွင်း သေဆုံးသွားပါသည်။ Ketoprofen သည် Diclofenac ဆေးကဲ့သို့ပင် လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များကို သေစေနိုင်သောကြောင့် အိမ်မွေး တိရစ္ဆာန်များတွင် လုံးဝအသုံးမပြုရန် တားမြစ်ထားသော အကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။
(Naidoo et al., 2010a).

Carprofen (ကာပရိုဖန်)

Carprofen အကိုက်အခဲပျောက်ဆေး ထိုးထားသော အိမ်မွေးတိရစ္ဆာန် အသေကောင်များကို လင်းတဉ်ကဲ့သို့သော မျိုးစိတ်များ စားသုံးမိပါက အချိန်တိုအတွင်း သေဆုံးစေနိုင်သော ဆေးတစ်မျိုးဖြစ်ပါသည်။ Carprofen သည် Diclofenac ဆေးကဲ့သို့ပင် တားမြစ်ထားသော အကိုက်အခဲပျောက်ဆေး တစ်မျိုးဖြစ်ပါသည်။
(Cuthbert et al., 2007)

Plate – 8: Education awareness on veterinary drugs for diclofenac & other NSAIDs (Middle pages)

Plate – 9: Education awareness on vulture species is natural cleaner to environmental

Preparing & standing signboard activities photos

Plate – 10: Preparing the signboard in front of the school at Hai pak village in Nam sang township

Plate – 11: Standing the signboard in front of the school at Hai – pak village in Nam sang Township

Education Awareness Activities Photos


Plate – 12: Discussion the activities plan with CBO members


Plate – 13: Talks on environmental conservation in Hai – pak village in southern Shan state

Plate – 14: Talks on environmental conservation at high school in Hai – pak village in southern Shan state

CBO members & training photos

Plate – 15: members of CBO in Hai – pak village in southern Shan state

Plate – 16: Field practical the bird watching training in Hai – pak village in southern Shan state

Plate – 17: CEPA training to CBO members at Hai – pak village in southern Shan state

Plate – 18: Addressing on constitution the community – based organization at Hai – pak village in southern Shan state

Logo of Hai – pak Nature Conservation Association, in Nam sang township, southern Shan state