Tergola Key Biodiversity Area Conservation Action Plan

"*Securing a future for Red panda*"

JIGME KHESAR STRICT NATURE RESERVE

Department of Forests and Park Services

Ministry of Energy and Natural Resources

Haa, Bhutan

July 2023 – June 2033

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Ministry of Energy and Natural Resources
Department of Forests and Park Services

Royal Government Endorsement and Approval

Tergola Key Biodiversity Area Conservation Action Plan1st July 2023 – 30th June 2033.

"In accordance with and as per the provisions of the Forest and Nature Conservation Act of Bhutan, 1995"

Submitted for Approval

Chief Forestry Officer
Jigme Khesar Strict Nature Reserve

Forwarded for Approval

Chief Forestry Officer

Nature Conservation Division

Approved by

DIRECTOR
Department of Forests and Park Services

ACRONYMS

FNCA	Forest and Nature Conservation Act of Bhutan 1995
PA	Protected Area
NCD	Nature Conservation Division
KBA	Key Biodiversity Area
SRF	State Reserve Forest
JKSNR	Jigme Khesar Strict Nature Reserve
IUCN	International Union for Conservation of Nature
CITES	Convention on International Trade in Endangered Species
FNCRR	Forest and Nature Conservation Rules & Regulations
JDNP	Jigme Dorji National Park
PNP	Phrumsengla National Park
NWFP	Non-wood Forest Produce
RGoB	Royal Government of Bhutan
BTFEC	Bhutan Trust Fund for Environmental Conservation
BFL	Bhutan for Life
IKI	International Climate Initiative
WWF	World Wildlife Fund
UNDP	United Nation Development Program
RSPN	Royal Society for Protection of Nature
masl	Meter above sea level

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Royal Government of Bhutan
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FOREWORD

Bhutan's rich biodiversity has been secured by the network of protected areas for the past many decades. However, the state of forests and biodiversity are equally rich beyond the protected areas in Bhutan. On the contrary, the areas beyond protected areas faces considerable threats from anthropogenic disturbances and economic development, and this poses risk to many globally threatened habitats and species found therein. Across the globe, such areas of conservation significance have been addressed by the "other effective area-based conservation measures" or OECMs, an area set aside towards achieving the long term and effective in-situ conservation of biodiversity outside of protected areas. OECMs complement protected areas through sustained, positive conservation outcomes, even though they may be managed primarily for other reasons.

The Key Biodiversity Areas (KBA) in Bhutan, at a global scale is part of the OECMs and is, therefore, adopted towards securing conservation of areas and species that are of conservation significance in Bhutan. Of the many potential KBA sites in the country, the Department has identified and prioritized 11 sites in various Divisional Forest Offices, that requires urgent conservation interventions. For these 11 sites, key interventions have been identified, and has been and is being presented in this conservation action plan as per the guidelines on KBA. The KBA sites classified will serve as in-situ conservation of biodiversity beyond the protected areas.

These classified KBAs are expected to bring in improved conservation outcomes, that are crucial for the functioning of the environment through the provision of essential ecosystem services. It is essential for the processes that support all life on Earth, including humans. These KBAs are expected to address the issues of biodiversity loss and ecosystem degradation due to threats such as pollution, overexploitation of natural resources, introduction of invasive species and habitat loss.

I am happy to note that we continue to prioritize conserving our natural resources, while balancing ourselves with the need to economically develop the nation. I applaud all concerned officials from the Department for coming up with this conservation action for the first set of KBAs classified in the country and wish you all success in implementing the actions.

(Lobzang Dorji)

Director

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Chapter One

Introduction

Background

Conservation of the environment is one of the four pillars of Bhutan's Gross National Happiness philosophy. As mandated in its constitution, Bhutan preserves (at all times) 60 percent of its land under forest cover. Protection, conservation and improvement of the pristine environment and safeguarding the biodiversity of the country is also one of the mandates of constitution of Bhutan. Bhutan has succeeded in doing so. More than 51% of the country is protected. Bhutan being the fragile and mountainous country, conservation and protection of forests and natural environment remains as the vital tool for fighting climate change.

Towards fulfilment of national conservation goals and commitments towards international commitments, and in pursuant to the provisions of Forests and Nature Conservation Act (FNCA) of Bhutan 1995, classifying conservation areas beyond the protected area (PA) is felt imperative in the face of increasing threats towards biodiversity conservation (NCD, 2020). Identification of 'Key Biodiversity Area' (KBA) and putting it under proper and sustainable management plan is one of the conservation measures initiated by Nature Conservation Division, DoFPS in 2005.

Therefore, Jigme Khesar Strict Nature Reserve (JKSNR) has identified 31.61 km^2 area as KBA site for Himalayan red panda *(Ailurus fulgens)* at Tergola (which is out of Strict Nature Reserve) with an aim to protect the area which is the main habitat for the Red panda. The Tergola KBA site cover SRF land under Gakiling and Sangbay gewog with major portion falling under Gakiling gewog with altitude ranging from 1700m to 3600m with diverse flora and fauna. The area is dominated by cool broadleaved forest with bamboo and rhododendron species as understory and patches of fir and mixed conifer forests can also be seen at the KBA site. *Meconopsis wallichii* can also be sighted along the road in the site thereby adding to the aesthetic view of the site. The KBA site start from North Tergola-Tshebji (27.226900^0N; 89.218875^0E) which is the highest point 3632m, at the East Tshochu base (27.191843^0N; 89.227406^0E) at 2469m, at south Lhatshona (27.157611^0N; 89.204736^0E) at 2800m, and Keyphu Nye at west which is the lowest elevation range of the site 1727m (27.187554^0N; 89.182639^0E). The area also holds the cultural significance as the name suggests Tergola "***the door of hidden treasure land***" which is the door towards Sangbay known to be the "***hidden treasure land***". It is also home to the native breed of cattle – **Nublang**.

Since the area is accessible by road, killing of the Red panda has been frequent in the previous year which is one of the main threats posing risk to its population decline and eventually leading to extinction from the site. The new road construction along the Red panda habitats, open up the easy access to the resources and also promotes illegal felling of mature trees and bamboo undergrowth. In addition to it, waste pollution and killing of the Red panda by stray dogs and other wild cats are some of the threats to its survival in the area. Since local communities are

dependent on the area, collection of NWFP such as bamboo, fern, elatostema and harvesting of timber and grazing in the area by the cattle poses risk to the area from habitat fragmentation and degradation. The area has been proposed as the mining site which would pose great risk to the, habitat destruction, fragmentation and degradation of the area and eventually leading to the extinction of the panda.

The Red panda coexists within this important landscape with the other mammals such as Asiatic black bear *(Ursus thibetanus)*, Sambar *(Cervus unicolor)*, Bhutan takin *(Budorcas taxicolor whitei)*, Marbled cat *(Pardofelis marmorata)*, Asiatic golden cat *(Catopuma temminckii)*, Tiger *(Panthera tigris)*, Leopard *(Panthera pardus)*, Gaur *(Bos gaurus)*, and Alpine musk deer *(Moschus chrysogaster)* thereby making this area a KBA for conservation.

The Red panda (Couvier, 1825) is protected as an endangered species throughout its whole range, Bhutan, Nepal, China, Myanmar and India, and is listed as an endangered species under International Union for Conservation of Nature (IUCN) and Appendix – I (species threatened with extinction which are or may be affected by trade) by the Convention for Illegal Trade of Endangered Species of Wild Fauna and Flora (CITES). The global population of Red Panda was estimated to be <10,000 matured individuals (Wang *et al*., 2008). However, IUCN (2015) has not estimated the global population of Red panda but stated its population is decreasing. Red Panda inhabits eastern Himalayan temperate broadleaved forest with bamboo understory with an altitudinal range preference of 2400-3900m (Pradhan, *et al*., 2001 and Yonzon & Hunter, 1991). Red panda is a unique carnivore that has adapted to the herbivore mode of life and is a resident of Himalayan region.

In Bhutan, the Red panda is a highly protected mammal species which is listed under the Schedule - I of Forest and Nature Conservation Act of Bhutan 1995 and FNCRR 2017. In Bhutan it is also not properly known about its abundance and distribution whereby active management of this species could not be pursued further. However, prior to biodiversity assessment survey 2010-2011 and 2019-2020, the presence at Tergola under Gakiling gewog was known with encounters of signs, direct sighting and image captured during camera trap survey. The area is very potential habitat to declare as KBA for Red panda which is outside PA. Such places of historical, cultural significance and diverse flora and fauna have great potential to draw and attract nature enthusiastic from within and outside the country.

Chapter Two

Threats and Challenges

Threats identification

The global population of Red Panda has been showing a progressive decline over time till now (IUCN, 2018). There are so many reasons for the population decline reported by many researchers, however habitat loss was considered to be the biggest threat followed by poaching. In Bhutan, felling of trees, road construction, grazing in Bamboo-Fir-Conifer forest may be a serious threat to Red panda habitat.

With the increase in human population coupled with increased developmental activities, the pressure on forests and natural resources has increased over past few years thereby contributing to the habitat loss, fragmentation and degradation of forests which eventually leads to loss and extinction of some important mammal and bird species. Red panda are known to be habitat specialists, maintain a small home range, and are restricted to small pockets of microhabitat (Bhatta *et al*., 2017). Therefore, being shy, crepuscular in nature, it is very mush apparent that they are very much sensitive to the disturbances made by anthropogenic.

Therefore, the threat analysis in conservation planning and management forms an integral part of conservation planning and management. Once threats are identified, threat ranking is done to prioritize different strategic interventions.

Figure 1: Himalayan red panda sighted along the Tergola road

Following major threats have been identified in the identified Red panda KBA site;

i. Habitat degradation and fragmentation

Due to Haa-Samtse secondary highway road construction, the area has been fragmented and disturbed to some extent. Killing of red panda by vehicle has been frequently observed along the road in the past years. Construction of roads has opened up formerly inaccessible areas for further development leading to both legal and illegal extraction of resources in the red panda habitat areas. Since local communities have traditional rights over the use of resources in the area, pressure on the area for grazing, timber, firewood and natural resources from local communities has increased thereby leading to the destruction of the area. Dying of bamboo in the red panda habitat were recorded, however bamboo regeneration is rigorously taking place.

ii. Local extinction/species loss

With the degradation and fragmentation of the area, risk of decline in population and extinction of red panda is obvious in the near future. Since bamboo is major source of food for red panda, increase in grazing pressure from local cattle in the area could lead to unavailability of food for red panda. And also harvesting of bamboo by people for various domestic uses could cause decline in the food availability for red panda.

iii. Predation by stray dog and other predators

Livestock herders keep domestic dogs to deter wild predators. These dogs roam freely in the forest and are a prominent threat to red pandas. We regularly saw dogs along the road network passing through the red panda habitat. As of now no incidence of killing of red panda by stray dogs has been observed but considering the incidences of red panda being attacked and killed by dogs at Jigme Dorji National Park (JDNP) and Phrumsengla National Park (PNP), it is obvious that stray dogs are immediate threat to red panda.

Since the area is home to natural predators such as marbled cat *(Pardofelis marmorata)*, Asiatic golden cat *(Catopuma temminckii)*, tiger *(Panthera tigris)*, and leopard *(Panthera pardus)*, existence of red panda is threatened by the presence of those predators in the area. Until today, no incidence of red panda being killed by wild predators has been noticed.

iv. Transmission of diseases

Improper management of waste left at the time of construction of road and waste left by passerby has caused nuisance and damaged the aesthetic view of the area. The waste triggers stray dogs to come to the area searching for food. According to Bush and Roberts (1977), increase in the population of free ranging dogs due to low coverage of mass dog sterilization in the countryside without ownership has also resulted in increased numbers of dogs entering the red panda habitat. Moreover, dogs are the known carrier of the canine distemper in case of lack of vaccination which is fatal to red panda.

Challenges

i. Climate change and red panda

Glatston et al. (2015) have suggested climate change as the main factor for the change in status of red panda from 'threatened' to 'endangered' on IUCN Red List. Currently there is no climate related data in the area. Yet we have been observing the impact of climate change in the area such as erratic snowfall and rainfall in the area. In the previous year, due to heavy snowfall, broken trees and branches of trees and destruction of bamboo understory in the red panda habitat has been observed. Such destruction is the immediate threat to the red panda which has resulted from climate change.

ii. Livelihood and traditional rights

Since local communities depend on the area for forest resources such as timber, firewood and NWFP, the pressure on the forest for natural resources has been increasing thereby posing great challenges to the conservation of red panda and its habitat. Most of the people residing in the area depend on cattle for their livelihood. Large populations of livestock and extensive traditional grazing rights is a challenging task to monitor the impact of grazing and their associated impacts on red panda conservation. However, with the action plan in place sustainable management of resources will be taken care of.

iii. Inadequate resources and capacity

Inadequate human resources and financial support are major challenges in the conservation of red panda and other species of concern in Bhutan (NCD, 2019). Forestry officials are the core people involved in conservation and research of red panda in the field but there is inadequate technical competency with respect to specific species owing to their multitasking responsibilities. Further, there are limited conservation professionals with extensive knowledge and experience on conservation of red panda. In order to address such a challenge, supporting us with an adequate budget and providing training to the officials regarding the red panda conservation is felt imperative. The available information is not sufficient; therefore an intensive research on population dynamics, status and its home range size and resource requirements of wild red panda needs to be studied for effective management.

Threat ranking

The overall threat assessment for Tergola Red panda KBA was ranked **High** (Table 1). The habitat degradation through timber harvesting, NWFP collection, livestock grazing and fragmentation by road construction was ranked **High**, species loss/extinction from local habitat was ranked **Medium** since road kill, illegal collection of timber and firewood and the dying of live bamboo was recorded. The transmission of diseases is also another threat which was listed as **Low** based on the recent case where most of the Goral, Serow, barking deer, and wild pig were infected by the goat virus and another agent of transmission of diseases like canine distemper and rabies to wildlife would be from the stray dogs. The predation by stray dog and other wild animal was ranked **Low** since there was no record and evidence of kill, however there was record of kill by stray dog at JDNP. Therefore, there is increasing number of stray dogs in the forest; it has major impact on the predation and as a diseases transporter. Climate change is also one of the threats listed, however it required further investigation to understand the impact of climate change on ecosystem and the species presence.

Thus, the priority actions identified should address the impacts that is being caused by several threats and challenges listed to ensure species population stability and growth in the KBA.

Table 1: Miradi table of threats for each target ranked based on scope, severity, and irreplaceability.

Threats \ Targets	Protection and conservation of species and its habitat.	Enhancement/diversification of local livelihood opportunities.	Summary Threat Rating
Predation by stray dog and other predators	Low		Low
Transmission of diseases	Medium		Low
Local extinction/species loss	High	Low	Medium
Habitat degradation & fragmentation	High	High	High
Summary Target Ratings:	High	Medium	**Overall Project Rating** High

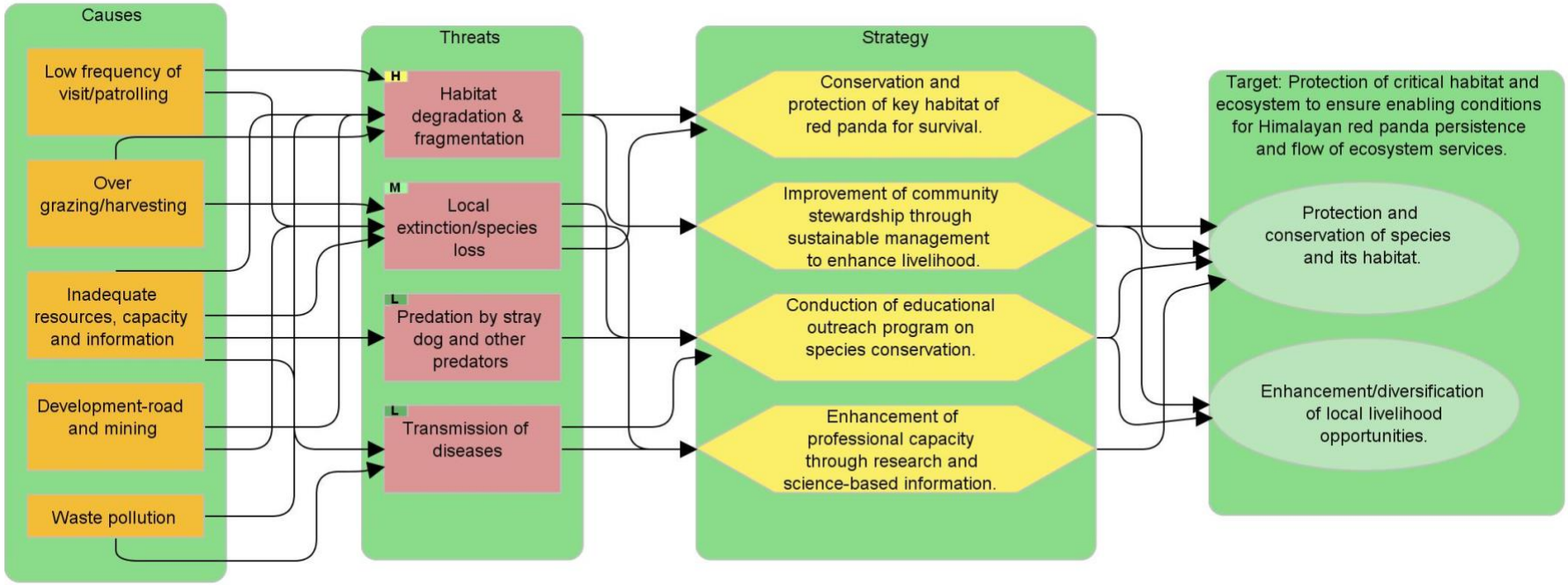

Figure 2: Schematic framework for Tergola Red panda KBA action plan to achieve Targets

Chapter Three

Interventions/Conservation Plan

Vision: *A viable population of red panda conserved within the KBA distribution area outside PA.*

Goal: *To strengthen red panda conservation program and restore habitat for its survival and maintain species persistence.*

Objectives:

- ✓ Protection and conservation of species and its habitat.
- ✓ Enhancement/diversification of local livelihood opportunities.

Strategies and actions (management interventions) are defined based on the overall goal of the action plan to protect and conserve species, maintain habitats and enhance social livelihoods of the communities. Theses strategic actions will be able to address the issues, threats, challenges and/or problems or overcome the barriers that hinder achieving the conservation objectives, and subsequently the conservation goals to ensure sustainable management of resources in and around the KBA site. In this section, the strategic plan (interventions) to address issues, threats and challenges discussed in Chapter Two of this plan is outlined. Those interventions/strategic plan would contribute towards achieving the overall conservation goals of Tergola red panda KBA. These will be achieved through the strategic actions grouped under two objectives, four strategies, and 17 actions which are detailed out in the implementation framework (Table 2) with specific program activity and estimated actual amount of fund required for successful implementation.

The total budget of **Nu. 7.37 million** is required to successfully implement this action plan for the duration of 10 years (2023-2033). Therefore, in pursuit of implementing various conservation programs for the next 10 years, and to achieve the goal and objectives, there must be a secured and sustainable funding mechanism. Despite the approved funding support under Bhutan for Life project, IKI project and RGoB, still there will be funding gap of **Nu. 6.57 million** to implement the activities, for which the management needs to explore funding from other conservation donors like BTFEC, WWF, UNDP, RSPN, Bhutan Foundation and other international donors and/or RGoB for implementation of planned programs.

The two field range office will implement field-based activities while the JKSNR head office with NCD will implement centralized coordinated activities like research, training, etc.

Table 2: Implementation Framework

Objectives	Strategies	Actions	Year along with budget (in Nu. Million)										Total	Remarks
			Y 1	Y 2	Y 3	Y 4	Y 5	Y 6	Y 7	Y 8	Y 9	Y 10		
1. Protection and conservation of species and its habitat.	1.1 Conservation and protection of key habitat of red panda survival.	1.1.1: Identify management regime for effective management-area will be zoned in consultation with the communities based on actual ground reality.	0.05										0.05	Management prescription to be prescribed based on area of zonation.
		1.1.2: Initiate habitat improvement through restoration of degraded habitat.		0.30				0.20					0.50	Bio-engineering on landslide areas.
		1.1.3: Conduct research and periodic monitoring of species through GPS collaring.		0.30									0.30	NCD/UWIFRT
		1.1.4: Conduct regular anti-poaching or ad hoc patrolling to curb illegal poaching.	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.80	KBA site
		1.1.5: Harnessing solar energy to improve livelihood/health of the herders.		0.30									0.30	15 Herders @ 19,000
		1.1.6. Organized waste management program-Cleaning or Pick-Pay waste collection concept through value chain development.	0.05		0.05			0.05			0.05		0.20	Dorithasa
	1.2: Enhancement of professional capacity through research and science-based information	1.2.1: Strengthen capacity of frontline staff in the field of red panda conservation.	0.10				0.10				0.10		0.30	Gakiling & Sangbay range staff
		1.2.2: Camera trap installation for monitoring of species and long term study	0.15				0.15				0.50		0.80	KBA site

2: Enhancement/diversification of local livelihood opportunities.	2.1: Improvement of community stewardship through sustainable management to enhance livelihood	2.1.1: NWFP group formation and marketing through value chain addition.	0.07									0.07	Dorithasa & Shebji village
		2.1.2: Promote citizen scientist program in community and school as a conservation partners & promote local stewardship.	0.10			0.10			0.10			0.10	0.40	Dorithasa & Shebji village
		2.1.3: Develop & promote community based red panda trail from Tergola – Dorithasa.	0.70										0.70	Ancient Trail Dorithasa youth
		2.1.4: Initiate home stay in the community for alternative livelihood-housekeeping, hospitality, culinary, etc...		0.10			0.10				0.10		0.30	Dorithasa & Shebji village (youth group)
		2.1.5. Promote/Support agriculture and livestock intensification programs in collaboration with DAO/DLO-support nutrition garden for organic products.		0.20	0.20					0.20			0.60	Dorithasa & Shebji
	2.2: Conduction of educational outreach program on species conservation.	2.2.1: Educational outreach program-Develop conservation educational materials (visual, cartoon, pamphlets, etc…)		0.25				0.25				0.25	0.75	Dorithasa & Shebji village
		2.2.2: Develop red panda souvenir, red panda prototype & information board at entrance gate, and structures at the strategic location.	0.40						0.20				0.60	KBA site
		2.2.3: Coordinate and collaborate closely, and regularly with livestock sector to monitor the prevalence of diseases.	0.05		0.05	0.05	0.05		0.05	0.05		0.05	0.35	KBA site

		2.2.4: Identify strategic locations of feral dog prevalence, and adopt population control.		0.07		0.07		0.07		0.07		0.07	0.35	KBA site
Total Nu. in million			**1.75**	**1.60**	**0.38**	**0.30**	**0.48**	**0.65**	**0.43**	**0.40**	**0.83**	**0.55**	**7.37**	

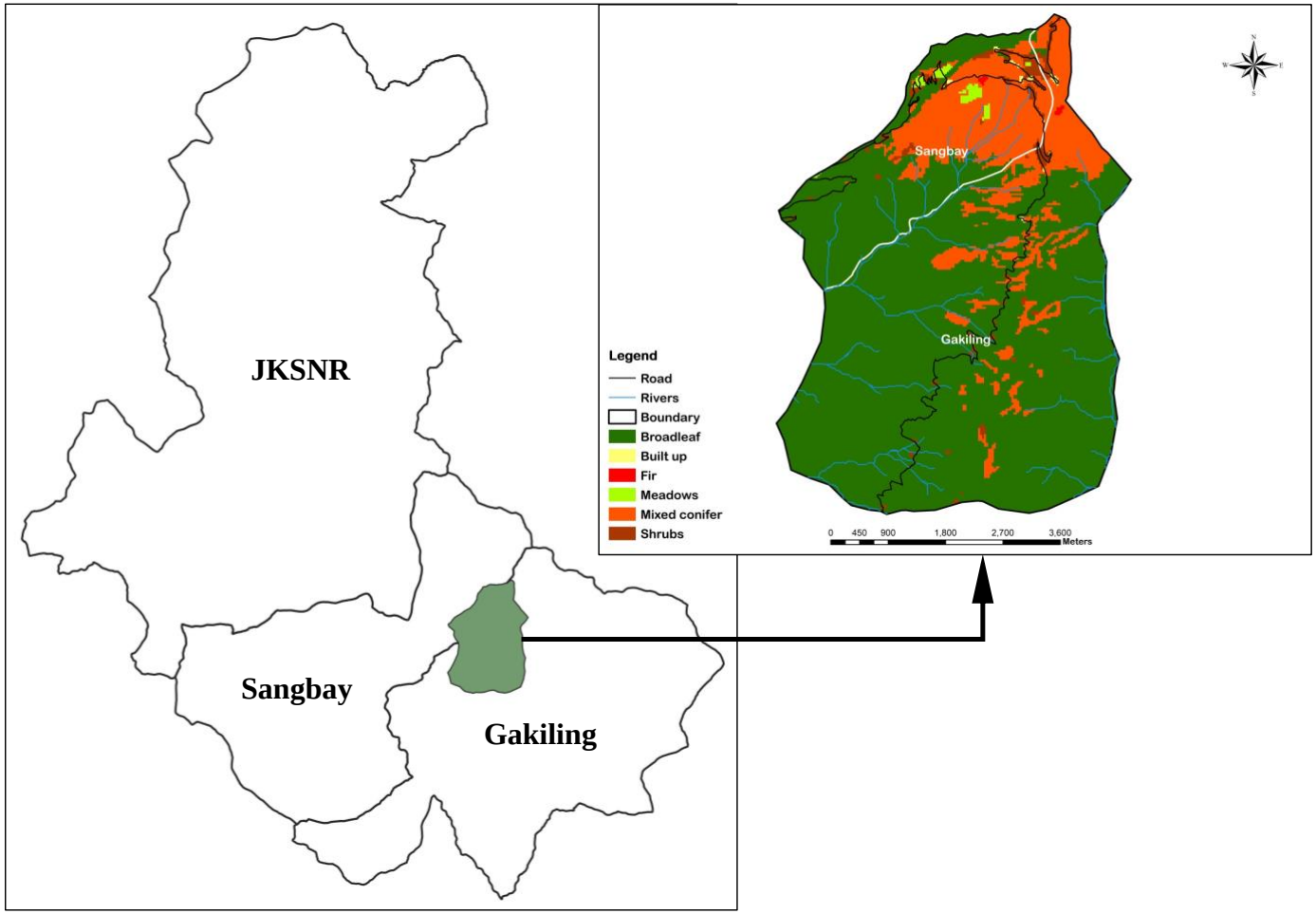

Figure 3: Map showing Tergola KBA location

Does and Don’ts

Following conditions will have to be considered for the successful implementation of conservation program in the Tergola KBA. There will be three zones (Core/Prime habitat, multiple use, transition). The habitat zonation will be done based on consultation with public and JKSNR secondary data. Zonation software ver. 4 will be used to determine the important and prime habitat of red panda. This is basically to identify prime habitat for protection and minimal human interference will be allowed in this zone comparing to other zone. However, the local communities having traditional user rights can access the inherent benefits with proper written by-laws.

Table 3: Does and Don'ts in KBA

Activity	Prime Habitat	Outside PH	Remarks
Grazing	✓ *	✓	*Traditional Users only
Logging	X	X*	Allowed in MU, TZ guided by Bylaws.
Hunting/Fishing/Poaching	X	X	
Waste Disposal	X	X	
Camping/hiking	✓	✓ *	*Allowed in designated sites
Research	✓	✓	Management & National needs
Habitat management	✓	✓	As per research conclusions & action.
Mining	X	X	
Road Construction	X	✓ *	*Detail assessment with recommendation
Collection of NWFPs and timber extraction	✓	✓ *	*Traditional users only, LFMA based on Bylaws.

Chapter Four

Monitoring and Evaluation

Timely monitoring and evaluation of the conservation programs is essential to ensure that the objectives are fulfilled. The monitoring and evaluation plan would be part of the conservation action plan and based on the plan, the activities will be monitored and reported as per the monitoring framework.

Monitoring

The monitoring at the field/implementer level will be done by the implementers continuously and throughout the implementation phase using the monitoring framework. Implementation of the plan will be monitored annually by head office in collaboration with range offices. Monitoring will be done after execution of the activities so as to ensure effective implementation and to address emerging challenges and issues and submit report annually to NCD for review.

Evaluation

The assessment will be a tool to understand the state of the KBA and to determine interventions that could be recommended to further enhance the management effectiveness of the KBA. The results of the assessment shall be used as a benchmark in monitoring the progress of the achievement of this goal/objective. The final evaluation of the KBA status would be carried out to evaluate the management effectiveness for two times within the 10 years plan period (once in 5 years (mid-term review evaluation of the action plan will be carried out towards the end of the five years of activities implementation).

Table 4: Monitoring Framework

Objectives	Action	Output indicator	Baseline	Unit	Yearly Target									
					Y 1	Y 2	Y 3	Y 4	Y 5	Y 6	Y 7	Y 8	Y 9	Y10
1. Protection and conservation of species and its habitat.	1.1.1: Identify management regime for effective management-area will be zoned in consultation with the communities based on actual ground reality.	Zonation completed	0	Map	1									
	1.1.2: Initiate habitat improvement through restoration of degraded habitat.	Area brought under restoration/improvement	0	Ha		5				5				
	1.1.3: Conduct research and periodic monitoring of species through GPS collaring.	Survey undertaken and completed to understand its distribution to ensure and maintain its population.	0	Report		1								
	1.1.4: Conduct regular anti-poaching or ad hoc patrolling to curb illegal poaching.	SMART and adopt Zero poaching strategy (SMART patrolling) to curb illegal poaching conducted.	1	Report	1	1	1	1	1	1	1	1	1	1
	1.1.5: Harnessing solar energy to improve livelihood/health of the herders.	Supply of solar lighting to herders	0	HHs		15								
	1.1.6. Organized waste management program-Cleaning or Pick-Pay waste collection concept through value chain development.	Organized and conduct waste management program.	1	Event	1		2			2			2	

2: Enhancement/ diversification of local livelihood opportunities.	1.2.1: Strengthen capacity of frontline staff in the field of red panda conservation.	Enhanced professional capacity of all field staff on red panda conservation.	25	Nos.	25				25				25	
	1.2.2: Camera trap installation for monitoring of species and long term study	Camera trapping for monitoring of wildlife species conducted.	1	Report	1				1				1	
	2.1.1: NWFP group formation and marketing through value chain addition.	NWFP group formed	0	Group	2									
	2.1.2: Promote citizen scientist program in community and school as a conservation partners & promote local stewardship.	Community Trained	0	HHs	50			50			50			50
	2.1.3: Develop & promote community based red panda trail from Tergola – Dorithasa.	Promote 12km red panda educational ecotourism.	0	Trail	1									
	2.1.4: Initiate home stay in the community for alternative livelihood-housekeeping, hospitality, culinary, etc...	Established homestay for livelihood	0	HHs		5			2				2	
	2.1.5. Promote/Support agriculture and livestock intensification programs in collaboration with DAO/DLO-support nutrition garden for organic products.	Support nutrition garden for organic product production.	0	HHs	10	10						10		
	2.2.1: Educational outreach program-Develop conservation educational materials (visual, cartoon, pamphlets, etc…)	Conduct awareness training & organized exposure trip and produced educational materials.	0	HHs		50				50				50

	2.2.2: Develop red panda souvenir, red panda prototype & information board at entrance gate, and structures at the strategic location.	Developed & Installed red panda information boards, signage, structures in strategic locations.	4	Nos.	10						10			
	2.2.3: Coordinate and collaborate closely, and regularly with livestock sector to monitor the prevalence of diseases.	Coordinate with livestock sector and trained patrol team to monitor the prevalence of diseases and set forth control program	0	Event	1		1	1	1		1	1		1
	2.2.4: Identify strategic locations of feral dog prevalence, and adopt population control.	Coordinate with livestock sector for feral dog sterilization program.	0	Event		1		1		1		1		1

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JIGME KHESAR STRICT NATURE RESERVE

Department of Forests and Park Services
Ministry of Energy and Natural Resources
Haa, Bhutan