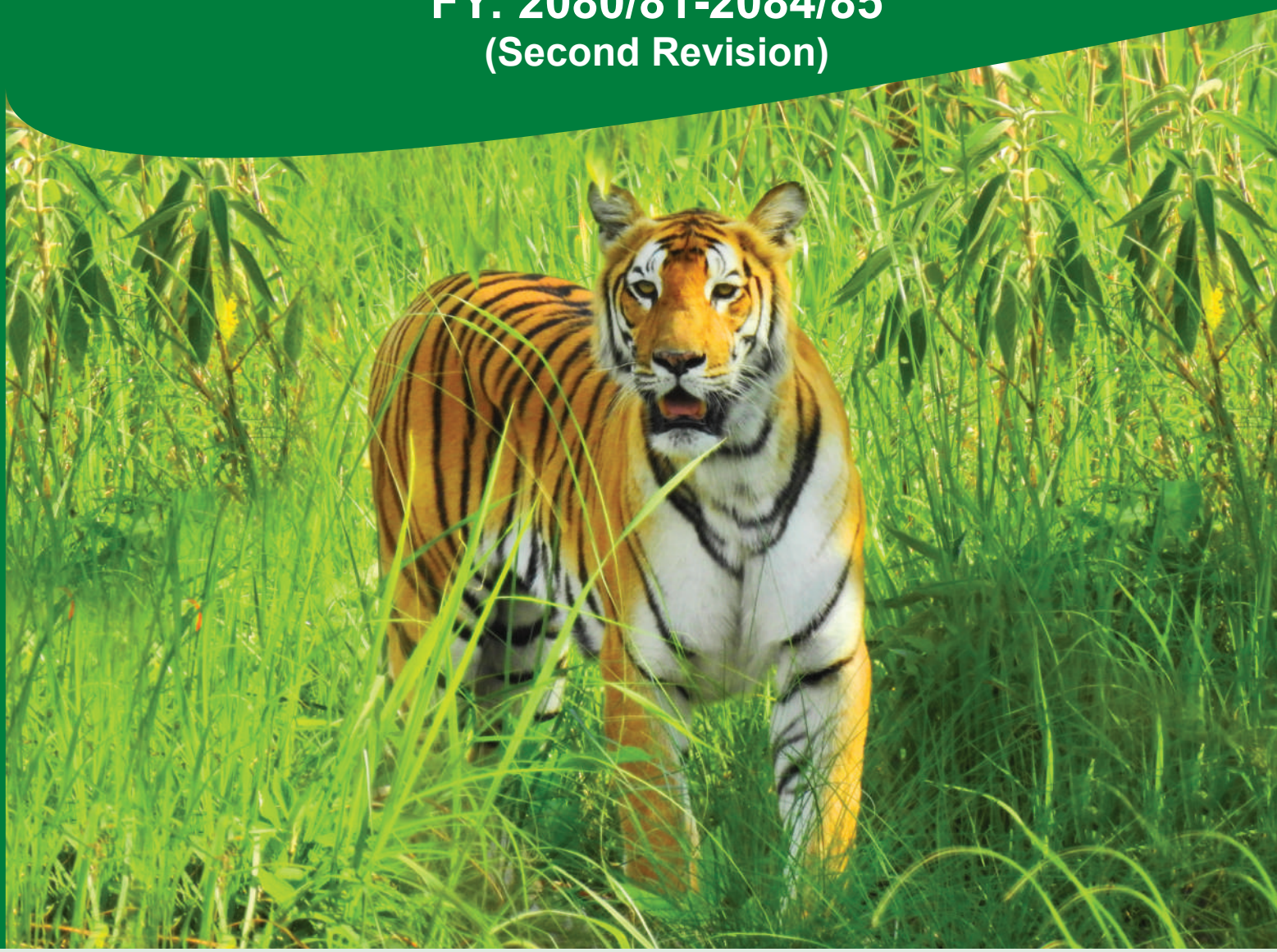
Banke National Park and its Buffer Zone Management Plan

# BANKE NATIONAL PARK
## and its BUFFER ZONE
# MANAGEMENT PLAN
## FY: 2080/81-2084/85
## (Second Revision)




Government of Nepal
Ministry of Forests and Environment
Department of National Parks and Wildlife Conservation
**Banke National Park Office**
Obhari, Banke

# Banke National Park and its Buffer Zone Management Plan

## FY 2080/81-2084/85

**(Second Revision)**


**Government of Nepal**

**Ministry of Forests and Environment**

**Department of National Parks and Wildlife Conservation**

## Banke National Park Office

**Obhari, Banke**

**Publisher:**
Banke National Park Office, Obhari, Banke, Nepal

**Citation:**
BaNP 2022. Banke National Park and its Buffer Zone Management Plan 2080/81-2084/85, Banke National Park Office, Obhari, Banke, Nepal



**Cover Photo Credit:**
Front Cover: Tiger, Umesh Poudel, NTNC
Back Cover: Four-horned Antelope, Chungba Sherpa

**Printed By:**
Sigma General Offset Press
Sanepa, Lalitpur
Tel.: 01-5554029

# Foreword

Nepal is disproportionately rich in biodiversity. The country's biodiversity hotspots are represented with the network of protected areas in different geographic region. The foundation of Banke national park in 2010 is another milestone to align biodiversity conservation activities with threatened species conservation and sustainable ecosystem services. This park is the important part of Terai Arc Landscape connected with Bardia National Park in the west and Suhelwa Wildlife Sanctuary in India in the south via community forest and government managed national forest. The park is declared in the eve of Tiger Summit at St. Petersburg in Russia in November 2010, the year of the tiger, as the extended habitat for tiger. During this 12 year the contribution of this park for tiger conservation is praiseworthy one with 25 adult tigers.

This second five-year management plan of the park further encourage to the park manager to move forward with better outcome. It gives clear roadmap to move ahead creating climate resilient ecosystems and species conservation with self-sustaining way forward. The plan is prepared with rigorous consultation with buffer zone user committee, district level stakeholders, conservation partners and park team including Nepal army deployed for the park security.

I would like to extend my sincere thanks to expert reviewers, Dr. Shant Raj Jnawali and Mr. Ajay Karki, DDG for their contribution to finalize the plan. I am equally thankful to Mr. Bishnu Prasad Shrestha, Chief, management section and his team of the Department of National Parks and Wildlife Conservation for their inputs and facilitation of the approval process. I am thankful to Mr. Shyam Kumar Shah, Chief Conservation Officer, Mr. Ashok Khadka, Colonel, Arjun Ban Battalion and their team, for coming up with this plan to safeguarding park biodiversity assets and ecosystem services. Finally, I would like to request to all conservation stakeholders to support for its implementation.

Maheshwar Dhakal, PhD
Director General
2079/08/08

G.P.O. Box: 860, Kathmandu, Nepal. Tel. 4220919, 4220850, 4227926, Fax : 977-1-4227675

Government of Nepal
Ministry of Forests and Environment
Department of National Parks and Wildlife Conservation

# Banke National Park Office

Obhari, Banke

## Acknowledgement

The In the history of species conservation in Nepal, the establishment of Banke National Park is another landmark decision of the Government of Nepal particularly as the extended habitat for tiger. Over the last twelve years, it has contributed to meet the goal of doubling tiger population with 25 estimated number as per 2021/2022 national tiger survey. This management plan of the park would become another stepping stone to achieve the desired goal in the long run while mitigating emerging challenges such as HWC, climate change, invasive species, wildlife road kills.

The present first revision of the management plan would not become possible without the efforts and contribution of the district stakeholders, buffer zone user committees, park staff, Arjun Ban battalion commander and team, the department of National Parks and Wildlife Conservation, conservation partners viz; NTNC, WWF, ZSL, consulting team members. I acknowledge the financial support of Bardia Conservation Program, NTNC for publication of this plan document.

I am thankful to Director General, Dr. Maheshwar Dhakal for his persistent guidance and suggestion for fine tuning of the plan document. Thanks goes to Deputy Director General, Mr. Ajay Karki for his critical final review of the plan.

I would like to appreciate the buffer zone user committee officials for participating in consultation meeting and share their view and perception what they expect with the park during the plan period.

I would be indebted to Arjun Ban Battalion commander and his team for their critical inputs to strengthen security arrangement of the park. I am equally thankful to the Chairperson, BZMC, Mr. Gehendra Kumar Khadka for his participation in the consultation meeting and sharing community views on natural resource management and utilization.

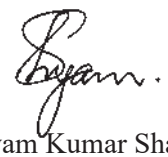
Thanks goes to conservation partners for their ideas and view on how the park would effectively conserve threatened species and strengthen park people relationship.

I am indebted to Mr. Manoj Ojha, managing director, Western Nepal Local Development Pvt. Ltd., consulting firm and his team members; Mr. Dinesh Bhandari, Mr. Nabin Joshi and Mr. Bikash Bista for their efforts for primary data collection and compilation. I would like to thank the team leader of the consulting firm, Mr. Ubaraj Regmi, former Deputy Director General of the department for his overall guidance in the plan preparation process. Thanks goes to Mr. Sunjeep Pun for his contribution for GIS mapping of the plan. Special thanks goes to Mr. Harish Bahadur Chand, forestry expert for his untiring efforts to prepare write up of the plan.

I am grateful to the staff of management section: Mr. Bishnu Prasad Shrestha, management officer, Rishi Ram Dhakal, assistant management officer, Mr. Gopal Khanal, assistant management officer for their invaluable support.

I am very thankful to all the Park staff for their team efforts in shaping this document in this present form.

Last but not least, I am grateful to expert reviewer, particularly, Dr. Shant Raj Jnawali who provided his invaluable feedbacks and suggestion to make it concise one.



Shyam Kumar Shah
Chief Conservation Officer
2079/08/08

नेपाल सरकार
वन तथा वातावरण मन्त्रालय
राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण विभाग

फोन नं. : ४२२०८५०
: ४२२०९१२
: ४२२७९२६
फ्याक्स नं. : ४२२७६७५

पत्र संख्या : -२०७९/८०-व्य २२५ व्यवस्थापन शाखा)
चलानी नं. : - २०२९

पो.ब. नं. - ८६०
बबरमहल, काठमाडौं
Email : info@dnpwc.gov.np
http//:www.dnpwc.gov.np

मिति : २०७९/९/१७

श्री बाँके राष्ट्रिय निकुञ्ज कार्यालय,
ओभरी, बाँके ।

विषय : व्यवस्थापन योजना स्वीकृत सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ कार्यालयको प.सं. ०७९/८० च.नं. ४७४ मिति २०७९/८/१४ को पत्रसाथ बाँके राष्ट्रिय निकुञ्ज तथा मध्यवर्ती क्षेत्रको पञ्चवर्षिय व्यवस्थापन योजना (२०८०/८१ - २०८४/०८५ ) स्वीकृतीको लागि पेश हुन आएको टिप्पणी फाईल उपर कार्वाही हुँदा राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण नियमावल, २०३० को नियम ३क को उपनियम (२) बमोजिम स्वीकृत भएको र सो योजना कार्यान्वयनका लागि वातावरण संरक्षण ऐन, २०७६ तथा वातावरण संरक्षण नियमावली, २०७७ अनुसार गर्नु पर्ने प्रारम्भिक वातावरणीय परीक्षण अध्ययन प्रकृया अगाडि बढाउने भनि मिति २०७९/९/११ को विभागीय निर्णय भएको व्यहोरा निर्णयानुसार अनुरोध छ ।

(ऋषिराम ढकाल)
सहायक व्यवस्थापन अधिकृत

# Executive Summary

Banke National Park (BaNP) is situated in mid-western tarai region of Nepal. BaNP is an important component of Terai Arc Landscape (TAL) which provides additional habitat for tigers. BaNP was established on Baisakh 30, 2067 B.S. (May 12, 2010). It was officially declared and published in Nepal gazette on Asadh 28, 2067 B.S. (12 July 2010) with the core area of 550 $km^2$ and 343 $km^2$ of BZ. The establishment of this park for the conservation of wild tigers, an endangered wildlife species, reflects the commitment of the Government of Nepal towards biodiversity conservation at landscape level. The core area of the park is entirely located in the Lumbini Province (Banke district) while its buffer zone includes portions of Lumbini Province (Banke, Bardia, Dang district) and Karnali Province (Salyan district). The Park borders Bardia National Park in the west, which connects to Katarniaghat Wildlife Sanctuary and Suhelwa Wildlife Sanctuary, respectively via, the Khata and the Kamdi corridor in the South-East in India. The connectivity facilitates genetic exchange of wildlife between PAs of Nepal and India, thereby providing habitat for free-ranging mega fauna such as tigers and wild elephants.

The park can be divided into important ecologicals zones namely Plains, Bhabar and Churai region. Of the several floras recorded in the park, 263 species have been identified. Sal (*Shorea robusta),* Asna *(Terminalia tomentosa),* Chiraunjee *(Buchanania latifolia),* Bajhi *(Anogeisus latifolia),* Sissoo *(Dalbergia sisoo),* Khair *(Acacia catechu),* Dumri *(Ficus glomerata),* Sindure *(Mallatous philippinsis)* and Jamun (*Eugenia jambolana)* are the dominant species in terms of density and basal area. About 20 to 30% of the area is dominated by Sal forest and other species include Barro *(Terminalia belerica),* Harro *(Terminalia chebula),* Karma *(Adina cordifolia),* Kusum *(Schleichera trijuga),* Bhalayo *(Semecarpus anacardium),* Tantari *(Dillenia pentagyna)* and Bot Dhaiyanro *(Lagerstroemia parviflora)*. Also, the park is home to 34 species of mammals, 236 species of birds, 9 species of amphibians, 24 species of reptiles and 55 species of fishes. Out of them 7 species of mammals (Tiger, Leopard Cat, Spotted Lingsang, Wild elephant, Striped Hyaena, Four Horned Antelope, and Indian Pangolin), two species of reptiles (Python and Golden Monitor Lizard) and one species of bird (Giant Hornbill) are in the protected list of National Parks and Wildlife Conservation Act, 2029.

As a relatively new protected area of the country, the first management plan has been successful in conserving and increasing the population of tigers, which further ensures the conservation of other important wildlife species in the park. For the protection of the park, an adequate number of park offices and security posts were constructed. During this period, local communities were actively engaged in conservation activities and other events, which shows the coordination between park and BZ communities. Forest cover was significantly increased. Despite the following accomplishments, the overarching problems of water scarcity, human-wildlife conflict, relief disbursement, the spread of invasive alien species, road kills, grassland coverage, climate change, and capacity building of BZ institutions were not met during this period. Also, wildlife research and infrastructure development for ecotourism have not been addressed adequately.

BaNP is currently confronted with a number of issues that must be addressed carefully for the conservation of biological diversity and for the maintenance of healthy populations of species of conservation significance. Poaching, insignificant grassland coverage, inadequate waterholes, forest fire, spread of invasive alien species, road kills, increasing human wildlife conflict, climate change, sustainable eco-tourism and infrastructure development have been identified as the major issues of concern. This management plan is expected to address most of these pertinent issues/challenges.

This management plan (2080/81-2084-/85) is the revision of the first management plan (2075/76-

2079/80). This plan is prepared under the leadership of Chief Conservator Officer of the park. It is the outcome of the team effort of the individuals representing various organizations and groups. It has been prepared in participatory approach on the basis of the format endorsed in Protected Area Management Plan Preparation Procedure, 2073. Nepal Biodiversity Strategy and Action Plan (2014-2020) was the main guiding document for conceptualizing vision, goal of the plan document, and devising strategy and plan activities. The plan is based on holistic approach and envisages bottom-up planning process. It has been prepared with the active involvement of the BZ communities, relevant government agencies, NGOs, technicians, social activists, tourism entrepreneurs, community organizations, and other stakeholders. The vision statement of BaNP and its BZ management plan is to enhance ecological integrity of the park for the wellbeing of people. The plan is prepared for conservation, management and utilization of the park and BZ resources in scientific and participatory approach with due consideration of its significance and integrity for human well-being.

The management plan objectives are:

- To protect and conserve biological diversity of the park with special focus on nationally protected and globally threatened wildlife species
- To manage wildlife habitat to maintain ecological functions and processes of Tarai and Churia region; and support to minimize climate change impact
- To improve community livelihood through nature based tourism promotion and
- To strengthen institutional capacity to carry out management activities through research, capacity building and cooperation among stakeholders.

Five broad thematic areas recognized in this management plan are park protection, habitat management, fire management, wildlife health management and encroachment management. Species Special Conservation Program has been formulated focusing on tiger, four horned antelope and elephant. Priorities are set for the research topics on species conservation, habitat management, tourism, and climate change related issues. Monitoring of species and their habitats, and capacity building programs are also planned. Nature based tourism such as elephant safari, Churia hiking, jeep safari and home stay development are planned to promote the park as tourist destination of Nepal. Special Programme consists of conservation of gharial, extension of the park, road kill management, climate change adaptation, solid waste management and livelihood programme for river dependent communities.

The overall budget of the plan for five years period is Rs. 1,47,26,39,856. Out of this, Rs. 84,47,30,321 is for core and buffer zone management activities; and Rs. 62,79,09,535 is for administrative cost of the park. Out of the total allocated budget for plan activities, 70% has been proposed for implementation of core activities and 30% for buffer zone management activities. The plan budget of the core is concentrated toward park protection (29%) and habitat management (15%). The government budget is expected to fulfill 72.93% of the total cost and the rest 27.07% is expected to be financed by local, province government and conservation partners that includes I/NGOs. Implementation of this plan will contribute to improved protection and conservation, management of park/BZ resources, development of ecotourism, enhancement of public relations and human well-being, and increased capacity of BaNP staffs and BZ communities.

# कार्यकारी सारांश

बाँके राष्ट्रिय निकुञ्ज र यसको मध्यवर्ती क्षेत्र नेपालको मध्यपश्चिम तराई क्षेत्रमा अवस्थित छ। यो निकुञ्ज बाघ संख्या अभिवृद्धि गर्नको लागि बाघको विस्तारित बासस्थानको रुपमा असार २८, २०६७ (१२ जुलाई २०१०) मा स्थापना गरिएको हो । निकुञ्जको क्षेत्रफल ५५० $km^2$ छ र मध्यवर्ती क्षेत्र ३४३ $km^2$ को छ । निकुञ्जको कोर क्षेत्र बाँके जिल्ला, लुम्बिनी प्रदेशमा पर्दछ र यसको मध्यवर्ती क्षेत्रले बाँके, दाङ र सल्यान जिल्ला, लुम्बिनी र कर्णाली प्रदेशलाई समेट्छ। यो निकुञ्ज पश्चिममा बर्दिया राष्ट्रिय निकुञ्जसँग जोडिएको छ र दक्षीणमा सामुदायिक वन हुदै भारतको सुहेलवा वन्यजन्तु आरक्षसँग जोडिएको छ । निकुञ्जमा ३४ प्रजातिका स्तनपायी, २३६ प्रजातिका चरा, ९ प्रजातिका उभयचर, २४ प्रजातिका सरीसृप र ५५ प्रजातिका माछा पाइन्छ। तीमध्ये ७ प्रजातिका स्तनपायी प्राणीहरू (बाघ, चितुवा बिरालो, स्पोटेड लिङ्साङ, जंगली हात्ती, हुडार, चौकार सालक), दुई प्रजातिका सरीसृपहरू (अजिंगर र सुनगोहोरो) र एक प्रजातिको चरा (राजधनेस) राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण ऐन, २०२९ को संरक्षित सूचीमा छन्। दुर्लभ तथा संकट्टापन्न प्रजाति लगायत निकुञ्जको समग्र जैविक विविधताको संरक्षणको लागि चोरीशिकार, अप्राप्त घाँसे मैदान, अप्राप्त पानीको श्रोत, वनडढेलो, वन्यजन्तुहरुको सडक दुर्घटना, बढ्दो मानव वन्यजन्तु द्वन्द्व प्रमुख समस्या एवं चुनौतीहरु रहेका छन् । यस व्यवस्थापन योजनाले उल्लिखित चुनौतीहरूलाई प्राथमिकतामा राखेर सम्बोधन गर्ने अपेक्षा गरिएको छ ।

हालको व्यवस्थापन योजना (२०८०/८१-२०८४/८५) अघिल्लो व्यवस्थापन योजना (२०७५/७६-२०७९/८०) को पहिलो संशोधन हो। यो योजना संरक्षित क्षेत्र व्यवस्थापन तयारी प्रक्रिया, २०७३ को प्रकिया बमोजिम तयार गरिएको हो। यस व्यवस्थापन योजनाको दूरदृष्टि मानव कल्याणको लागि पारिस्थितिक प्रणाली अक्षुण्णता अभिवृद्धि गर्नु रहेको छ । प्रकृति एवं पारिस्थिकिय प्रणालीको महत्व र अखण्डतालाई ध्यानमा राखी वैज्ञानिक र सहभागितामूलक पद्धतिबाट निकुञ्ज र मध्यवर्ती क्षेत्रको स्रोतहरूको संरक्षण, व्यवस्थापन र उपयोग गर्न योजना केन्द्रित रहेको छ।

व्यवस्थापनका उद्देश्यहरू निम्न हुन्:

- राष्ट्रिय रूपमा संरक्षित र विश्वव्यापी रूपमा खतरामा परेका वन्यजन्तु प्रजातिहरू केन्द्रित निकुञ्जको जैविक विविधताको संरक्षण गर्ने
- तराई र चुरिया क्षेत्रको पारिस्थितिक प्रणालीको अक्षुण्णता कायम राख्ने वन्यजन्तुको बासस्थानको व्यवस्थापन गर्ने; र जलवायु परिवर्तनको प्रभावलाई न्यूनीकरण गर्न टेवा पुर्याउने ।
- प्रकृतिमा आधारित पर्यटन प्रवद्र्धन मार्फत सामुदायको जीविकोपार्जन सुधार गर्ने र
- अनुसन्धान, क्षमता अभिवृद्धि र सरोकारवालाहरू बीचको सहकार्य मार्फत व्यवस्थापन गतिविधिहरू सञ्चालन गर्न निकुञ्जको संस्थागत क्षमता सुदृढ गर्ने।

यस व्यवस्थापन योजनाको पाँचवटा विषयगत क्षेत्रहरू रहेका छन् : संरक्षण, बासस्थान व्यवस्थापन, डढेलो नियन्त्रण एवं व्यवस्थापन, वन्यजन्तुको स्वास्थ्य व्यवस्थापन र अतिक्रमण व्यवस्थापन । बाघ, चौका र हात्तीलाई केन्द्रमा राखेर प्रजाति विशेष संरक्षण कार्यक्रम तर्जुमा गरिएको छ । प्रजाति संरक्षण, बासस्थान व्यवस्थापन, पर्यटन, जलवायु परिवर्तन र जीविकोपार्जनसम्बन्धी अनुसन्धानका विषयहरूलाई प्राथमिकतामा राखिएको छ। निकुञ्जलाई नेपालको पर्यटकीय गन्तव्यका रूपमा प्रवर्द्धन गर्न हात्ती सफारी, चुरिया हाइकिङ, जीप सफारी र होमस्टे विकास जस्ता प्रकृतिमा आधारित पर्यटनको योजना रहेको छ । विशेष कार्यक्रममा घड़ियालको संरक्षण, निकुञ्जको विस्तार, वन्यजन्तुको सडक दुर्घटना, जलवायु परिवर्तन अनुकूलन, फोहोरमैला व्यवस्थापन र नदी आश्रित समुदायका लागि जीविकोपार्जन कार्यक्रम समेटिएको छ ।

पाँच वर्षे अवधिको योजनाको कुल बजेट रु. १,४७,२६,३९,८५६ रहेको छ । यसमध्ये रु. ८४,४७,३०,३२१ निकुञ्जको कोर क्षेत्र र मध्यवर्ती क्षेत्रको संरक्षण र व्यवस्थापनका कार्यक्रमहरूको लागि प्रस्ताव गरिएको छ र कार्यक्रम सञ्चालनका लागि योजना अवधिमा प्रशासनिक लागत रु. ६२,७९,०९,५३५ अनुमान गरिएको छ । योजनागत क्रियाकलापका लागि विनियोजित कुल बजेटमध्ये ७० प्रतिशत निकुञ्जको कोर क्षेत्रको कार्यक्रम कार्यान्वयन गर्न र ३० प्रतिशत मध्यवर्ती क्षेत्रको लागि प्रस्ताव गरिएको छ । आर्थिक वर्ष २०७९/८० निकुञ्जको विनियोजित रकर र वार्षिक १० प्रतिशत वृद्धि हुने आधारमा योजनामा समिवष्ट कार्यक्रमहरु कार्यन्वयन गर्न कुल लागतको ७२.९३% रकम पूरा हुने देखिन्छ र नपुग २७.०७% संरक्षण साझेदार संघसंस्थाहरु र स्थानीय तहबाट पूर्ती हुने अपेक्षा गरिएको छ। यस योजनाको कार्यान्वयनबाट निकुञ्जको संरक्षण, मध्यवर्ती क्षेत्रको स्रोतहरूको व्यवस्थापन, प्रकृतिमा आधारित पर्यटनको विकास, समुदायको जीविकोपार्जनमा टेवा पुग्ने र निकुञ्ज एवं मध्यवर्ती क्षेत्रको संस्थागत विकास हुने अपेक्षा गरिएको छ।

# Acronymns and Abbreviations

| | |
|---|---|
| ACO | Assistant Conservation Officer |
| APU | Anti-Poaching Unit |
| ATM | Automated Teller Machine |
| B.S. | Bikram Sambat |
| BaNP | Banke National Park |
| BNP | Bardia National Park |
| BZ | Buffer Zone |
| BZCF | Buffer Zone Community Forest |
| BZMC | Buffer Zone Management Committee |
| BZUC | Buffer Zone User Committee |
| CA/TS | Conservation Assured/ Tiger Standard |
| CBAPU | Community Based Anti-Poaching Unit |
| CBD | Convention on Biological Diversity |
| CBO | Community Based Organization |
| CCO | Chief Conservator Officer |
| CF | Community Forest |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CNP | Chitwan National Park |
| DAO | District Agriculture Office |
| DoFSC | Department of Forests and Soil Conservation |
| DG | Director General |
| DNPWC | Department of National Parks and Wildlife Conservation |
| FHA | Four Horned Antelope |
| GIS | Geographical Information System |
| GoN | Government of Nepal |
| GPS | Global Positioning System |
| HEC | Human Elephant Conflict |
| HH | Household |
| HWC | Human Wildlife Conflict |
| IAS | Invasive Alien Species |
| IBA | Important Bird and Biodiversity Area |

| | |
|---|---|
| IEE | Initial Environmental Examination |
| IUCN | International Union for Nature Conservation |
| Km | Kilometre |
| KrCA | Krishnasaar Conservation Area |
| KWS | Katarniaghat Wildlife Sanctuary |
| LEA | Law Enforcement Agencies |
| m | metre |
| Masl | metres above sea level |
| NGO | Non Governmental Organization |
| NPWC | National Park and Wildlife Conservation |
| NTCC | National Tiger Conservation Committee |
| NTNC | National Trust for Nature Conservation |
| NTRP | National Tiger Recovery Programme |
| oC | degree Centigrade |
| OP | Operational Plan |
| PA | Protected Area |
| PALNet | Protected Area Learning Network |
| RRT | Rapid Response Team |
| SAWEN | South Asia Wildlife Enforcement Network |
| SMART | Spatial Monitoring and Reporting Tool |
| SWS | Suhelwa Wildlife Sanctuary |
| TAL | Terai Arc Landscape |
| TCAP | Tiger Conservation Action Plan |
| TCU | Tiger Conservation Unit |
| TIES | The International Ecotourism Society |
| TRC | Tiger Range Countries |
| UNFCCC | United Nations Framework Convention on Climate Change |
| VDC | Village Development Committee |
| VIC | Visitor Information Center |
| WCCB | Wildlife Crime Control Bureau |

# Table of Contents

**List of Annexes**



**List of Tables**

**Lists of Figures**

# Process of Management Plan Preparation

The Management Plan for BaNP and its BZ (2080/81−2084/85) is the outcome of the team effort of the individuals representing various organizations and groups. It has been prepared in participatory approach on the basis of the format endorsed in protected area management plan preparation procedure, 2073. Nepal biodiversity strategy and action plan (2014-2020) was the main guiding document for conceptualizing vision, goal of the plan document, and devising strategy and plan activities. The plan is based on holistic approach and envisages bottom-up planning process. It has been prepared with the active involvement of the BZ communities, relevant government agencies, NGOs, technicians, social activists, tourism entrepreneurs, community organizations, and other stakeholders.

In the plan preparation process, following steps were followed– a. review of published literature, documents, annual reports, project reports, b. consultation meeting with park staff, Nepal Army c. focus group discussion with all the buffer zone user committees, buffer zone management committee, and hotel entreprenuers, d. district level stakeholder meeting e. logical framework was prepared with consultation of park officials and consulting team at the park office. f. prepare draft management plan, g. forwarded to reviewers for suggestions, comments and feedback, h. draft plan presented at the Department of National Parks and Wildlife Conservation to get officials comments and feedback, i. Incorporating comments and suggestions from DNPWC officials j. Draft send to expert reviewers for comments and suggestion k. Incorporationg the comments and suggestions from expert reviewers l. finalization of the management plan and j. to be submitted for approval.

# Part A

# The Existing Situation

# Introduction of the Protected Area

CHAPTER 1

## 1.1 Name, Location, Constitution and Extent

### 1.1.1 Name

Banke National Park and Buffer Zone

### 1.1.2 Location

Banke National Park (BaNP) and its Buffer Zone (BZ) is situated in Mid-western tarai region of Nepal. The core area of the park is entirely located in the Lumbini Province (Banke district) while its buffer zone includes portions of Lumbini Province (Banke, Bardia, Dang district) and Karnali Province (Salyan district). The geographical location of the park is between N 27°58'01" to N 28°21'02" latitude and E 81°39'2" to E 82°12'1" longitude. The administrative map of the BaNP and its BZ is shown in Figure 1.

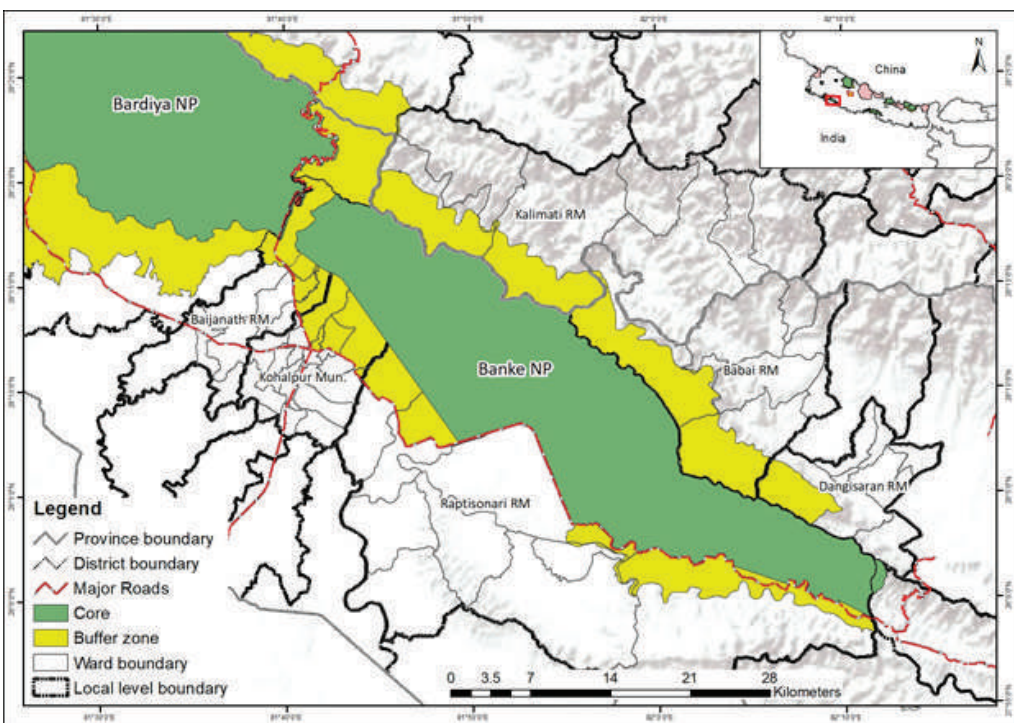



**Figure 1:** Location map of BaNP and its Buffer Zone

### 1.1.3 Constitution and Extent

BaNP covers an area of 550 km$^2$ and is bounded by a 343 km$^2$ buffer zone in the districts of Banke, Salyan and Dang. BaNP borders Bardia NP in the west, Shiv khola in the east, east-west highway in the south and the crest of Churia in the north. BaNP is connected with Suhelwa Wildlife Sanctuary (SWS), India through Kamdi corridor. The Park's average length is 63 kms (East–West), with a breadth ranging from 7 to 20 kms (North-South). The BaNP at a Glance is given in Table 1.

**Table 1: BaNP at Glance**

| | |
|---|---|
| 1989 | The late King Birendra Bir Bikram Shah gave directive to extend BNP to the east to Banke |
| 1995 | Prepared a plan to extend BNP including BZ |
| 2000 | Rt. Honorable Prime Minister Mr. Girija Prasad Koirala declared the area as "Gift to the Earth" |
| 2009 | Recommended to establish BaNP rather than extension of BNP |
| 2010 | GoN declared BaNP and its BZ on Baisakh 30, 2067 B.S. (May 13, 2010) from the meeting of council of Ministers held (cabinet) at Kalapatthar, with an Park area of 550 $km^2$ and BZ of 343 $km^2$ which is spread over Banke, Dang and Salyan district |
| | The Park and its BZ was gazetted on Asadh 28, 2067 B.S. (July 12, 2010) |
| 2013 | Tiger survey using camera trap: 4 individuals recorded |
| 2018 | Tiger survey using camera Trap: 21 individuals recorded |
| | Preparation of first management plan of BaNP |
| 2022 | Tiger survey using camera trap: 25 individuals recorded |

## 1.2 Access

The Park is accessible from Kathmandu via bus and plane. It is approximately a ten- to twelve-hour vehicle travel from Kathmandu. By air, it's a one-hour flight from Kathmandu to Nepalgunj (Ranjha airport), then a fifteen-minute drive to Kohalpur, the Park's western sector office, and a half-hour journey from there to Obhari, the Park headquarters.

## 1.3 Statement of Significance

BaNP was formed on 12 July 2010 (Nepal Gazatte of Ashadh 28, 2067) as the country's tenth National Park. The Park is formed after Nepal's commitment to double the tiger number and extend tiger habitat to provide additional space. The Park represents Nepal's mid-western Tarai ecosystem. Tarai, the country's southern lowland region, is vital for biodiversity conservation. BaNP, along with a few other lowland PAs, is one of the few places where Tarai forests are still intact. The park is home to 34 species of mammals, 236 species of birds, 9 species of amphibians, 24 species of reptiles and 55 species of fishes.

The park protects portions of the Churia range, a young mountain range that stretches from the East to the West of the country and is considered to be extremely fragile. Churia recharges ground water from rainwater, which is critical for agriculture and the livelihood of the Tarai people.

The Park borders BNP in the west, which connects to KWS and SWS respectively via the Khata and the Kamdi corridor in the South-East in India, and thus facilitates genetic exchange of wildlife between PAs in Nepal and India, thereby providing habitat for free-ranging mega fauna such as tigers and wild elephants. Beside these,

- Bardia-Banke complex is the one of the 25 level I (highest probability of long term persistence of tiger) TCU identified in 3 bio-regions- the India sub-continent, Indo China and Southeast Asia.
- The park is registered for the Conservation Assured/ Tiger Standard (CA/TS) on September 4, 2016.
- The park is also one of the 37 Important Bird and Biodiversity Areas (IBA) of Nepal.
- BaNP is the land of indigenous people i.e., Tharu, Badi, Khuna, Sunaha and Kumal community.

# Background Information and Attributes

2 CHAPTER

## 2.1 Boundaries

### 2.1.1 Legal Boundary

BaNP was established on Baisakh 30, 2067 B.S. (May 12, 2010). It was officially declared and published in Nepal gazette on Asadh 28, 2067 B.S. (12 July 2010) with the Park area of 550 $km^2$ and 343 $km^2$ of BZ. BaNP and BNP share border at the Kohalpur-Surkhet route and forms the western and eastern boundaries of the BaNP and the BNP, respectively. The boundary of the park and its BZ according to the Gazette is as:

### 2.1.2 Boundary of the Park

**East:** From the east west highway upto the source of Shivakhola tills the ridge of Churia of Banke and Dang district in the north

**West:** From the eastern boundary of Bardia National Park and Chisapani of Kohalpur-Surkhet road upto Deurali danda in the north.

**North:** The ridge of churia form the source of shiva khola and on the west the boundary of ridge of the hills that separate Dang, Salyan, Banke, Bardia upto the Deurali danda of Nepalgunj-Surkhet road on the north.

**South:** The boundary of Bardia National Park in the east which runs through east south corner of chisapani pillar of Nepalgunj-Surkhet road running through Chyamagaon, Khadbar, Mahadevpuri, Balapur, Obhari village and northern boundary of handed over Community Forests, fire line of eastern side of Post of district forest office, Gothari, Gavar, Bairiya, Chappargaudi village, outer boundary of Community Forests and Shivakhola of east-west highway.

### 2.1.3 Boundary of Buffer zone

**Eastern side of Banke district**

East: Shiva khola

West: Khairee khola

North: Boundary of fireline of southern part of BaNP

South: Keeping confluence of Rapti and Shiva khola inside running upto the confluence of Khairee khola and Rapti khola.

**Western side of Banke district**

East: Fireline of BaNP near Obhari village and southern highway where it meets east-west highway

West: Eastern boundary of BZ of Bardiya National Park (BNP)

North: Southern Fireline of BaNP

South: East-West highway of Obhari to Kohalpur, From Kohalpur to eastern boundary of BNP through Ratna Highway

**Northern area of Dang and Salyan**

East: Confluence of Malai stream and Babai river which originates from the ridge of churia hill and watershed of Malai stream

West: Eastern boundary of BZ of BNP

North: Babai river

South: Northern boundary of BaNP

### 2.1.4 Ecological Boundary

The Park is located in tropical and sub-tropical ecological zones, as well as the Churia, Bhabar (a thin stretch of gently sloping southern foothills of the Churia hills), and Tarai physiographic regions of Nepal. The Park is contiguous to BNP in the west and facilitates genetic exchange and gene flow amongst PA's wildlife populations. Babai River, a functional river corridor for long ranging animals is north of the park and flows through BNP. Similarly, it connects to India's KWS and SWS through the BNP and Kamdi corridors, forming a larger TCU that provides a better chance for species' long-term survival, particularly for free-ranging large mammals such as tigers, wild elephants, and other rare and endangered species.

## 2.2 Geology and Soil

The soil types of the Park are determined by the geological formation of the Churia range. The exposed rocks consist of fine-grained sandstone with clay, shale, conglomerate, and freshwater limestone pockets. The Bhabar zone gets boulders, cobbles, gravel, and coarse sand from the Churia, interspersed with silt and clay.

## 2.3 Topography and Drainage

The Park's topography is diversified, including flood plains, river basins and gorges, and the Churia hills between the Rapti and Babai rivers in the south and north, respectively. The elevation varies between 153 meters (near Dhakeri) and 1247 meters (Kuine ridge Churia near Furke Salli). In the Churia hill, the dominant slope of BaNP is between 40 and 50 degrees. The slopes of the Churia foothills range from 5 to 30 degrees. The Tarai on the southern side has a 5 degree slope and is quite flat with deep soil.

Two major rivers, Rapti and Babai enclose the BZ. Rapti River forms the southern boundary, whereas the Babai River has demarcated the northern boundary of the BZ (Figure 2). In terms of drainage, BaNP can be divided into two parts: the Rapti River basin in the south and the Babai River basin in the north. The Churia ridge splits the basin and creates the catchment boundary. The Churia hills are the source of all of the Park's streams. Kathauti, Jethi, Syalmare, Ranighat, Jhijhari, Baghsal, Paruwa, Muguwa, Khairee, Sukhar, Lumba/Rolpali, Sauri, Bairiya, Oz Khola, and Tilkanya are the main streams in the Rapti watershed (southern aspect) of the Park, whereas Malai Khola is in the Babai catchment (northern aspect). During the rainy season, the water discharge of these rivers/streams is extremely high whereas in summer, many of the streams are dry.

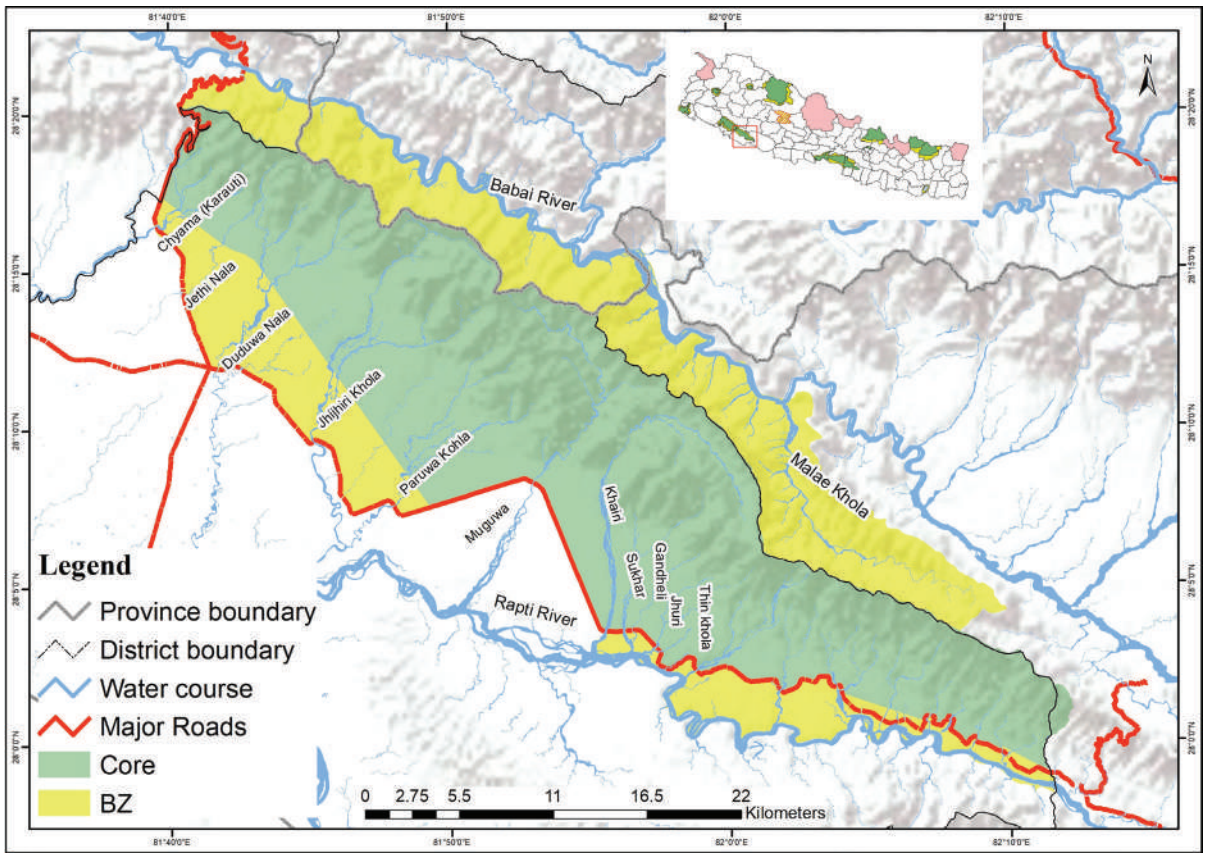



**Figure 2:** Map showing drainage system

### 2.4 Climate

The park and its BZ experience tropical monsoon climate with high humidity monsoon season. There are three distinct seasons i.e., summer, winter and monsoon each having unique characteristics as in Table 2.

**Table 2: Climatic details of BaNP**

| Season | Duration | Temperature | Remarks |
|---|---|---|---|
| Summer | February to May | Day time temperature rises up to 39 °C | The hottest period is between late April to early June<br>This season is usually dry<br>Human-induced fires are common in this season |
| Winter | November to February | Temperature drops up to 7 °C | December and January are the coldest months<br>Relative humidity reaches 100% during night<br>Rains are scanty and winds are not common |
| Monsoon | June to September | Mean temperature is 34 °C | The wettest months are July and August<br>About 80% of the annual rainfall is received in this season |

### 2.4.1 Temperature

The analysis of temperature data showed the temperature of BaNP over 30 years' time period remains more or less same. The trend of temperature from 1991 to 2020 is shown in Figure 3. The average annual temperature during 1991 to 2020 was found to be 20.18 ℃. The maximum and minimum annual average temperature during this period was found to be 21.26 ℃ (2002) and 19.18 ℃ (2020), respectively.

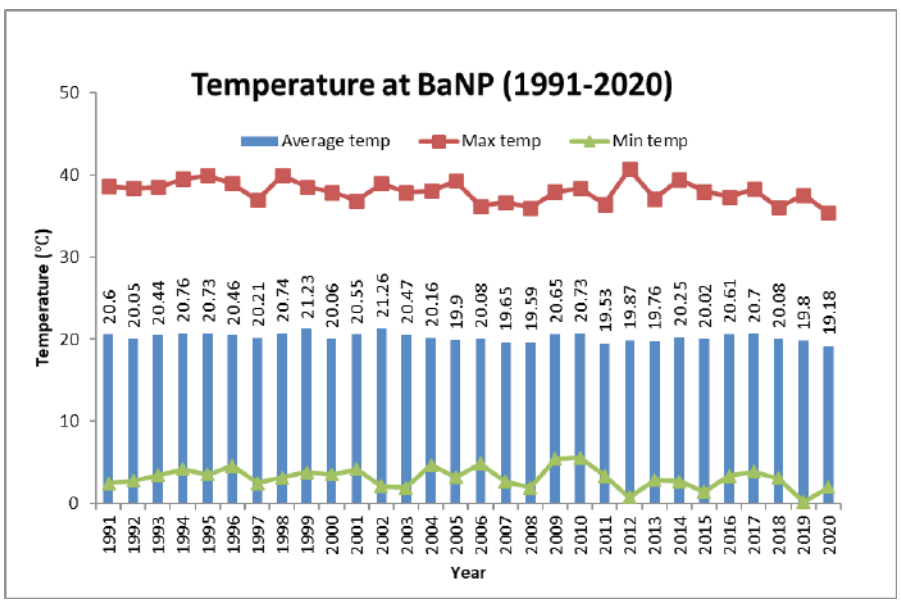



**Figure 3:** Temperature at BaNP during 1991 to 2020

Similarly, the analysis of average monthly temperature during the same period showed June was the hottest month whereas January was the coldest month. The highest average monthly temperature were found for the month June (27.56℃) followed by May (26.97℃) and July (25.01℃). Similarly, the lowest average monthly temperature were found for the month January (11.57℃) followed by December (12.88℃) and February (13.79℃). The average monthly temperature for the period 1991 to 2020 is shown in Figure 4.

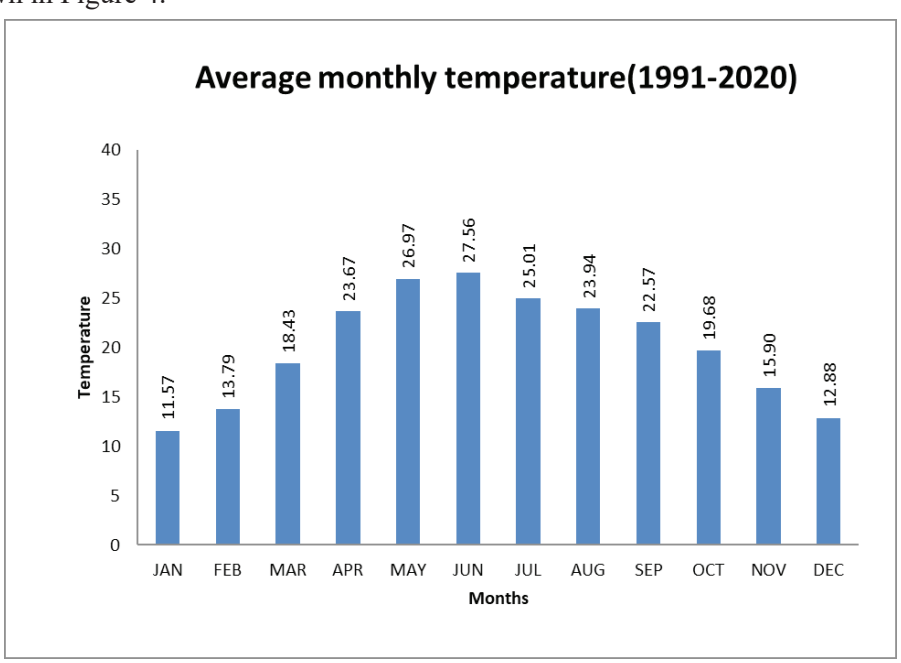



**Figure 4:** Average monthly temperature during 1991 to 2020

### 2.4.2 Rainfall

The analysis of rainfall data for the period of 1991 to 2020 showed, the total annual rainfall recorded during 1991 to 2003 was less than 1000 mm and after 2003, the total annual rainfall was recorded higher than 1000 mm as shown in Figure 5. The average total annual rainfall for the period 1991 to 2020 was found to be 1049.37 mm. In this period, maximum and minimum total annual rainfall was found to be 1828.30 mm (2013) and 426.07 mm (1997), respectively.

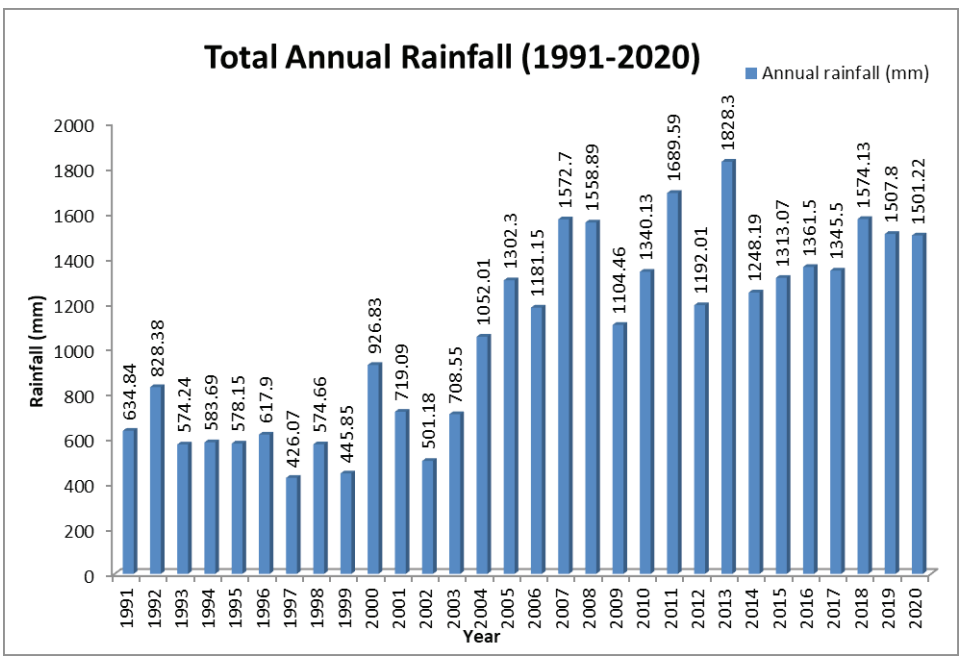



**Figure 5:** Total Annual Rainfall during 1991 to 2020

Similarly, the monthly average annual rainfall for the period 1991 to 2020 was found highest for month July (313.88 mm) and lowest for the month November (4.84 mm). The months July (313.88 mm), August (238.75 mm) and June (165.55) experience highest rainfall whereas November (4.84 mm) and December (11.75 mm) receives the lowest rainfall. The monthly rainfall pattern for the period of 1991 to 2020 is shown in Figure 6.

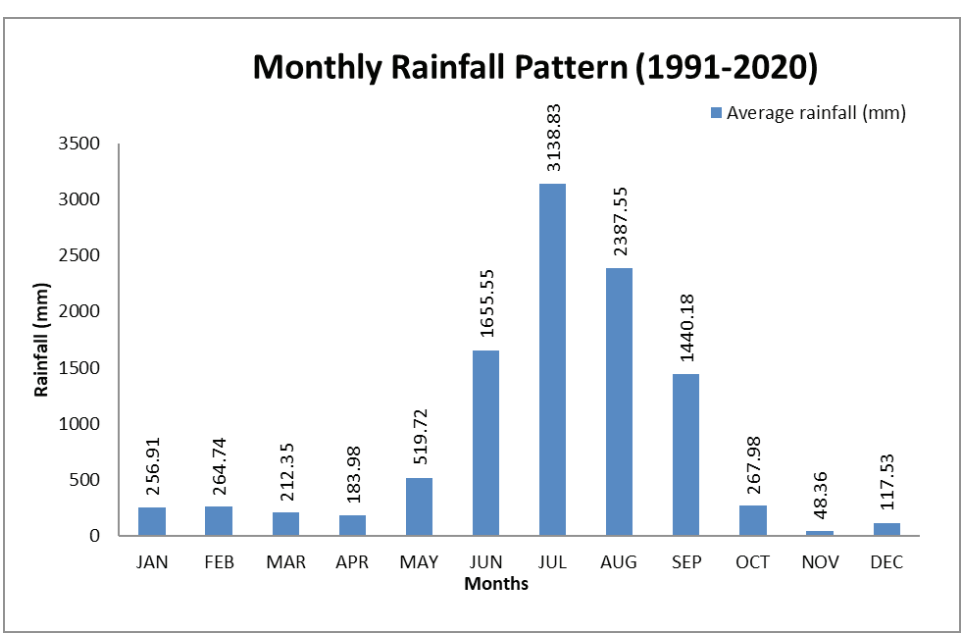



**Figure 6:** Monthly rainfall pattern during 1991 to 2020

## 2.5 Biodiversity status

### 2.5.1 Flora

The Park can be divided into three ecological regions as:

a) **Plains:** Sal forest, riverine forest, floodplain forest, and khair-sissoo forest along the streams.

b) **Bhabar/foothills:** Hill sal forest, mixed hardwood forest, and riverine forest.

c) **Churia ridge:** Mixed churia hill forest and hill sal forest.

Of the several floras recorded in the Park, 263 species have been identified. Sal (*Shorea robusta),* Asna *(Terminalia tomentosa),* Chiraunjee *(Buchanania latifolia),* Bajhi *(Anogeisus latifolia),* Sissoo *(Dalbergia sisoo),* Khair *(Acacia catechu),* Dumri *(Ficus glomerata),* Sindure *(Mallatous philippinsis)* and Jamun (*Eugenia jambolana)* are the dominant species in terms of density and basal area. About 20 to 30% of the area is dominated by Sal forest and other species include Barro *(Terminalia belerica),* Harro *(Terminalia chebula),* Karma *(Adina cordifolia),* Kusum *(Schleichera trijuga),* Bhalayo *(Semecarpus anacardium),* Tantari *(Dillenia pentagyna)* and Bot Dhaiyanro *(Lagerstroemia parviflora)*. The detail of flora of BaNP is provided in Annex I.

### 2.5.2 Fauna

#### 2.5.2.1 Mammals

The Park is home to 34 species of mammals (Annex II). Among them, seven species are protected under National Parks and Wildlife Conservation (NPWC) Act 2029. These protected species are: Tiger (*Panthera tigris*), Leopard Cat (*Felis bengalensis*), Spotted Lingsang (*Prionodon pardicolor*), Asian Wild Elephant (*Elephas maximus*), Striped Hyaena (*Hyaena hyaena*), Four-horned Antelope (*Tetracerus quadricornis*) and Indian Pangolin (*Manis crassicaudata*).

#### 2.5.2.2 Birds

Birds are good indicators of ecosystem and monitoring of birds is an integral part of management system. BirdLife International has identified BaNP as an Important Bird Area (IBA). To date, 236 species of bird have been reported from the Park out of which one protected bird species is reported under NPWC Act, 2029 i.e. Great Hornbill (Annex III). Similarly, BaNP harbors six globally and 11 nationally threatened bird species. Great Slaty Woodpecker (*Mulleripicus pulverulentus*), Egyptian Vulture (*Neophron percnopterus*), Whiterumped Vulture (*Gyps bengalensis*), Steppe Eagle (*Aquila nipalensis*), Woolley-necked Stork (*Ciconia episcopus*) and Hodgson's Bushchat (*Saxicola insignis*) are the six globally threatened species found in the Park. Some nationally threatened species found in the Park are Grey Francolin (*Francolinus pondicerianus*), Northern Pintail (*Anas acuta*), Great Hornbill (*Buceros bicornis*), Yellow-wattled Lapwing (*Vanellus malarbaricus*), Himalayan Vulture (*Gyps himalayensis*) and Asian Openbill (*Anastomus oscitans*).

#### 2.5.2.3 Herpeto-fauna

Very little study has been done on the herpeto-fauna and invertebrates of the area. To date, 24 species of reptiles and nine amphibian species have been reported from the area (Annex IV). Burmese Python (*Python bivittatus*) and Golden monitor lizard (*Varanus flavescens*) is endangered species reported from the area and are therefore protected species in the Herpeto-fauna list of NPWC Act 2029. Endangered species Gharial was previously observed in Rapti River. However, at present, it has not been reported so far.

Other common reptiles reported are Garden lizard (*Calotes versicolor*), Brookes' house gecko (*Hemidactylus brookii*), Agama Rock Lizard (Laudakia tuberculata) Krait (*Bungarus caeruleus),* Common Cobra (*Naja naja*) and Russell's Viper (Daboia russelii). The common ambhibian species recorded in the Park include Indian Bull frog (*Hoplobatrachus tigerinus*), Marbled toad (*Duttaphrynus stomaticus*) and Common Asian Toad (*Duttaphrynus bengalensis*).

### 2.5.2.4 Fish diversity

Several fish species are found in the major river systems of the Park. To date, 55 species of fish have been reported out of which 35 fish species are reported from Rapti River only.

# CHAPTER 3

# Past Management and Present Practices

## 3.1 Conservation History

In 1989 A.D., the late King Birendra Bir Bikram Shah during his visit to the Mid-western region of Nepal gave directive to the GoN to extend BNP to the east to Banke, to include forests north of the East-West (Mahendra Highway) up to the Churia Hill ridge in the north. In 1990, a meeting held under the chairmanship of the Zonal Commissioner decided to exclude all the villages north of the East-West highway except Bharaiya village of, the then, Kohalpur Village Development Committee (VDC), Balapur of Mahadevpuri VDC and Nepalgunj Forestry Development Project Complex, and to resettle all the villages north of the highway including Obhari settlement. Later, after his visit and inspection of the area, the Mid-Western Regional Forest Director decided to exclude Bharaiya and Balapur settlements and proposed the area with the following boundary:

East: Imaliya-Dang Tulsipur Road,

West: Kohalpur-Surkhet Highway,

North: main Ridge of the Churia Hills, and

South: the Mahendra Highway.

In 1990, a team including Dr. Tirtha Man Maskey, Mr. Ram Prit Yadav and Mr. Krishna Man Shrestha was formed on 29/07/1990 (2047/4/14 B.S.) to prepare a detail proposal including boundary, list of settlements and households (HHs), population of the area, area for resettlement if necessary, and compensation to be provided.

The team submitted a report to DNPWC and recommended to exclude major settlements, agricultural lands, and Nepalgunj Forestry Development Project area from the proposed extension area. The team proposed the boundary of the extension area as:

East: Shiva Khola,

West: Kohalpur Surkhet highway,

North: main Ridge of the Churia Hills, and

South: a Park road (to be constructed from Chisapani to Obhari excluding road department's camp, Chyama and Baniyabhar villages, NFDP and the East-West Highway.

In 1995, a team was formed by DNPWC under the chairmanship of Mr. Krishna Man Shrestha, Park and People Project, to submit a report on the extension area of BNP. Later, Mr. Krishna Man Shrestha and Mr. Shiva Raj Bhatta submitted a report to DNPWC on proposed BZ Boundary, and a proposal of Salyan District Administration Office (DAO) and, then the District Forest Office to include Kavrechour VDC and part of Kalche VDC in proposed Park extension.

In 1996, a meeting organized by DNPWC on 26/07/1996 (2053/4/11 B.S.) decided to form a 'Working Team' to submit a report within one month after conducting field study, collecting and updating information of the extension area.

A meeting organized by Banke District Forest Office on 9/12/1996 (2053/8/24 B.S.) coordinated by the Regional Forest Director and represented by District Forest Office of Banke and CCO of BNP estimated the proposed extension area about 598.4 $km^2$ and its BZ 301.57 $km^2$, and suggested to:

- Extend the BNP as per the boundary descriptions;
- Include the forest in extension area as proposed by Salyan District Forest Office; and
- Protect the extension area by BNP staff

A memorandum was submitted to, the then, HMG by DNPWC for decision on extension to protect catchment of Babai River and its tributaries, and flora and fauna through people's participation.

In 1998, Technical report on biodiversity inventory, socio-economy, policy and legal aspect and an Operational Plan (OP) was prepared with the support from WWF Nepal Program.

In 2000, Rt. Honorable Prime Minister Mr. Girija Prasad Koirala declared the area "Gift to the Earth".

In 2009, Rt. Honorable Prime Minister Mr. Madhav Kumar Nepal and Honorable Minister for Forests and Soil Conservation Mr. Deepak Bohora committed to include this Park under PA system specially to conserve tiger, prey base and their habitats during Global Tiger Workshop held in Kathmandu.

Later, in December a Task force including Deputy DG Mr. Megh Bahadur Pandey (DNPWC) and a working team including the CCO of BNP were formed. After rapid field visit and interaction with concerned stakeholders, the team recommended establishing BaNP.

In 2010, GoN declared BaNP and its BZ on May 13, 2010. In 2010, the Park and its BZ was gazetted on July 12, 2010.

## 3.2 Protection of the Park

Banke National Park was established in 2010 with the aim to contribute in doubling the tiger's population in 2022. Park protection has been undertaken by a battalion of Nepal Army and national park posts. The battalion headquarters is located in Obhari and security posts at various strategic locations (Figure 7). Regular patrolling effort from the security posts established in the park has been one of the major activities to ensure protection. A total of 22 park protection post exists. Out of 22 posts, 16 posts are jointly run by the national park and the Nepal Army, 3 are run single handily by National Park and 1 by Nepal army alone. The detail of the posts is given in Annex V. The protection and management of the Park has resulted in the increase of tiger and other endangered wildlife species. The increased number of tiger and sighting of other wildlife is an indicator of an effective protection and management.

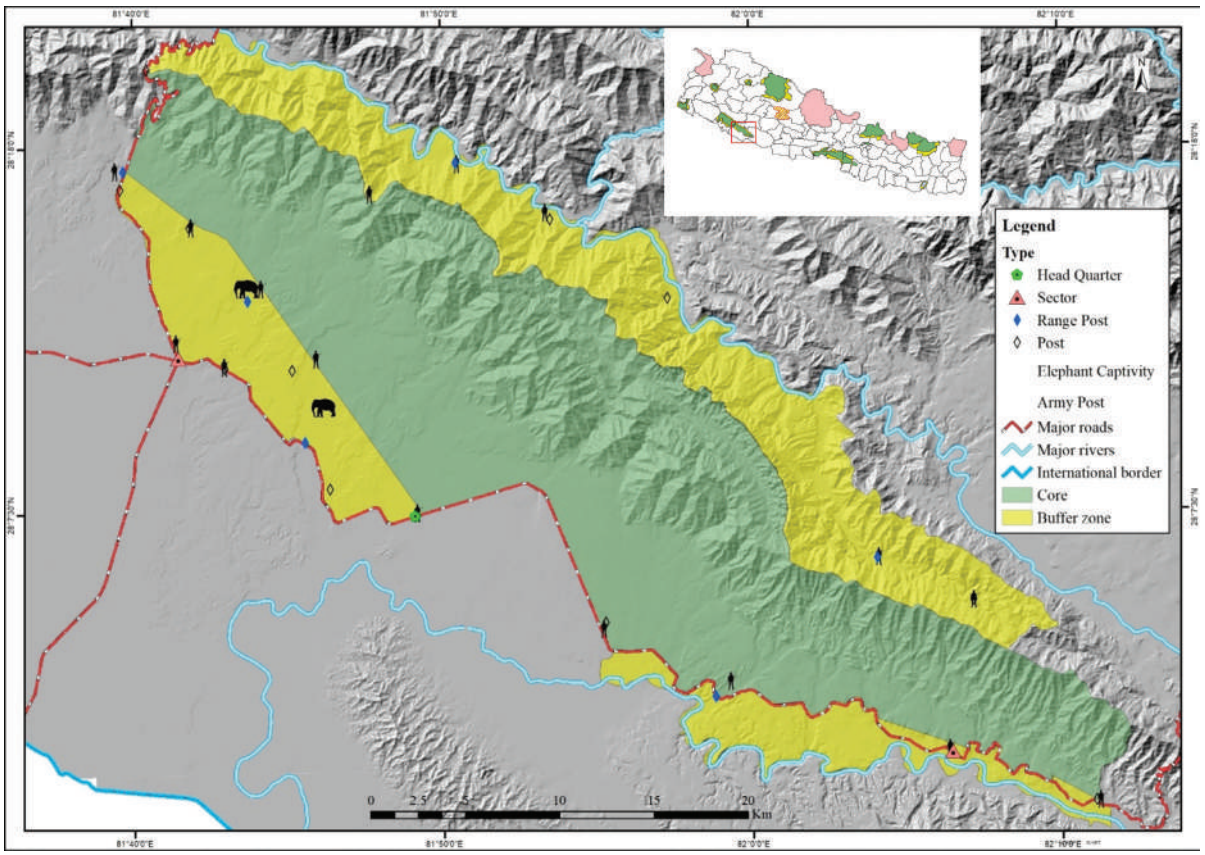



**Figure 7:** Location of Protection Unit posts

Similarly, the forests in the buffer zone are protected and managed by buffer zone community themselves with the support of BaNP. Nepal army do protection of wild animals in the buffer zone. The overall conservation of biodiversity in the buffer zone remains with the park authority and buffer zone communities. Sometimes, protection units are mobilized in the buffer zone to deter or capture offenders based on intelligence.

## 3.3 Habitat Management

Habitat management is one of the important strategies in conservation being used globally to increase the extent of ecologically important habitats with enhanced ecological functions. Habitat degradation and loss are among the most significant threats to wildlife conservation. The condition of ecosystems health and habitat quality are under increasing pressure from anthropogenic causes that is further aggravated by the impacts from climate change. The purpose of habitat management is to improve existing habitat to benefit wildlife. Forests, grasslands and wetlands are major habitat of important wildlife species of BaNP. Each of the habitat is described below:

### 3.3.1 Forest Habitat Management

Forest is the important habitat for wild elephants, deer species, ungulates and reptiles for food and cover. Out of the total core area, 541.32 sq. km. is forests. Similarly, BZ consists of 279.47 sq. km. of forests as in Table 3. The land use cover map is shown in Figure 8.

Forest fire and spread of invasive alien species is the key issue of the forest habitat management in the park. Most of the forests of BaNP are located in the Churai region. The Churia region lacks year-round access to water, and because of its geology, the forests are largely degraded with sparse trees.

Additionally, the park area's narrow north-south span and long east-west reach make it difficult to contain the wild animals. The management of the forest habitat will be a top priority for the conservation of the entire protected area.

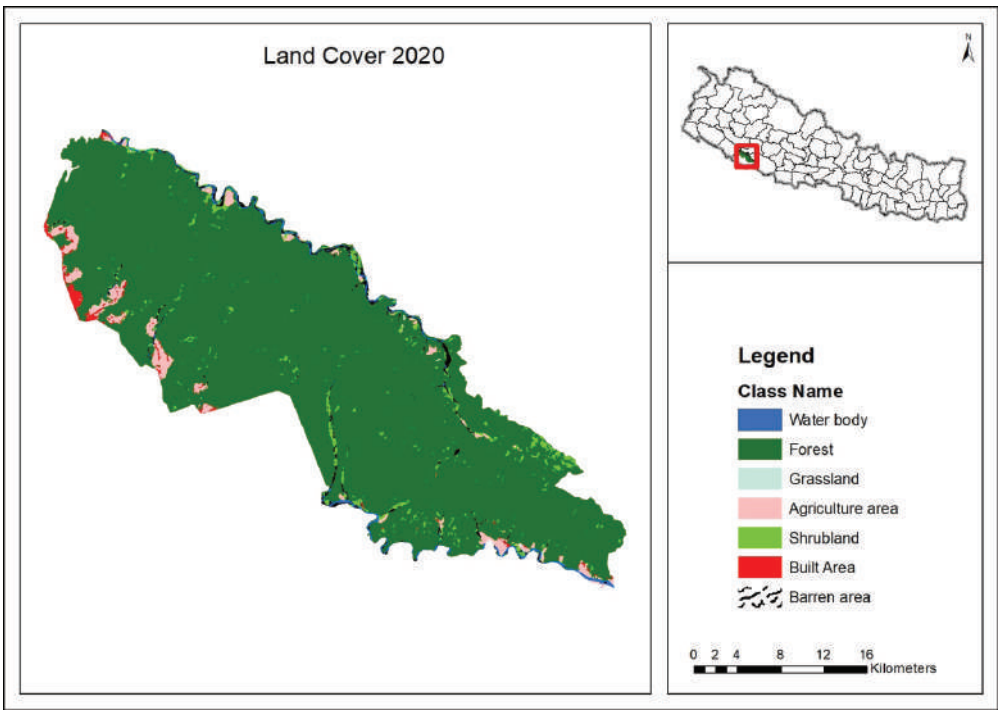



**Figure 8:** Land Cover map of BaNp and Its BZ

### 3.3.2 Grassland Habitat Management

Grassland is very important habitat component, mainly for FHA, ungulates, deers, and birds. These grasslands are small in area and are mostly located in lower belt of the park. Most of the grasslands

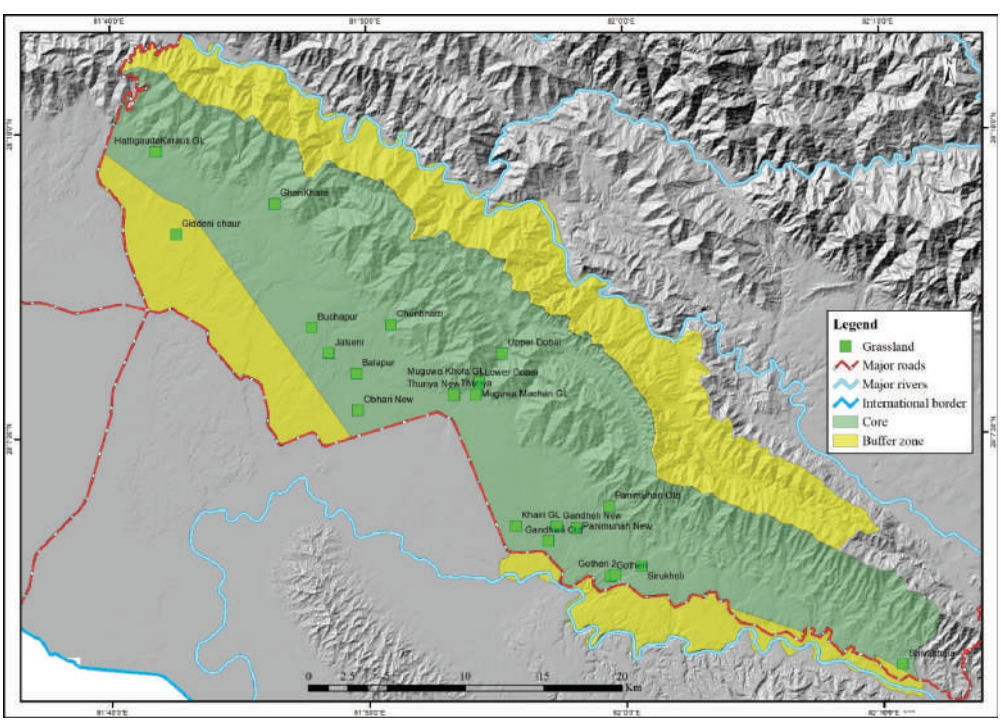



**Figure 9:** Map showing grassland in the BaNP

are having affected by the growth of unwanted species (shrubs and small trees), the grassland areas are heavily affected. The management of grassland area of the park require periodic management interventions. The location map of grassland is given below in Figure 9 and detail is given in Annex VI.

The park contains a small proportion of grassland area which is broadly categorized into two different types. a) Grassland with small size trees dominated with grass species like Siru-*Imperata cylindrica*, Kansh-*Saccharum* spp., Botdhanyero-*Lageerstroemia parviflora*, Sissoo and Karma. b) Riverine grassland comprises of grass species like Dubo-*Cyanodon dactylon*, Banso-*Eragrostis unioloides*, Karaunti-*Leersia hexandra*, Kansh etc.

### 3.3.3 Wetland Habitat Management

Wetlands are home to some of the most biologically diverse creatures on our earth due to the unique land and water characteristics found in marshy areas. They also have many purposes beyond feeding and sheltering wildlife; wetlands serve as floodwater storage and filters, help prevent erosion during storms, provide natural resources, and generate economic benefits through tourism and recreation.

BaNP have several natural water sources which include rivers, streams, spring sprouts and small puddles. Rapti and Babai rivers are two major rivers which run along the southern and the northern boundary of the park. A total of 82 waterholes have been constructed till date as listed in Annex VII. Each year the waterholes are maintained and restored as per the needs. However, these water holes are characteristically small in dimensions and are not able to hold water for longer period of time. The management of wetland habitat is crucial incontext to the park management. Important water ponds and water holes inside the forest of foothills of Churia and low lands areTharu Bas, Tirtire, Jethi Nala, Giddeni Chaur, Jhijhari Khola, Lute Pani, Thuriya Khola, Kaala Pani, Khairee Khola, Aghaiya, Rolpali Khola, Bhatti Khola, Bairiya Khola, Buchapur, Obhari, Sukai Khola, and Gotheri. BaNP has also created waterholes in Giddeni Chaur, Jalseni, Khadkabhar, Chunbhatti, Buchapur, Thuria, Pani Muhan and Rani Gajuri. The location map of the waterholes is shown in Figure 10.

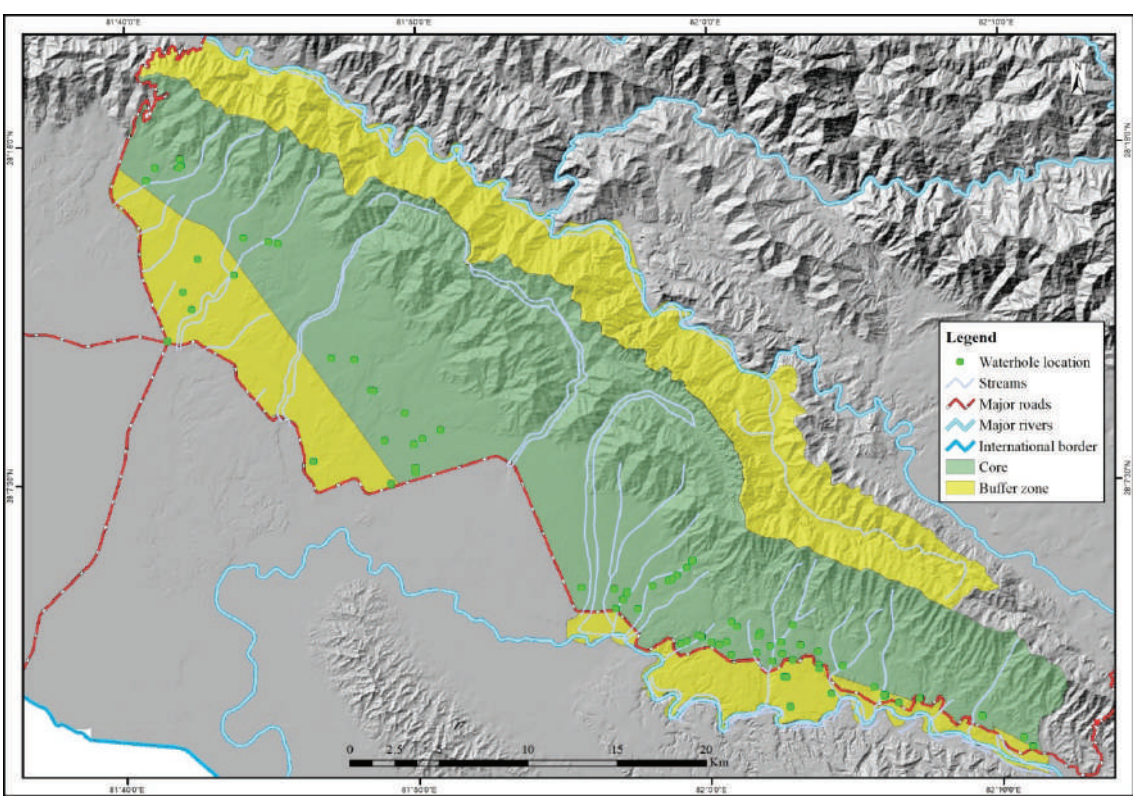



**Figure 10:** Location of waterhole in BaNP

The park consists of 0.41 sq. km. and 10.50 sq. km. of water body in core and BZ, respectively as shown in Table 3. The core area has no perennial river system but the BZ consists of 2 major rivers (Babai and Rapti) flowing in the border area of the park.

**Table 3: Land use cover map detail of BaNP and BZ (2020)**

| SN | Land Classes | Core (sq. km.) | BZ (sq. km.) |
|---|---|---|---|
| **1** | Forest | 541.32 | 279.47 |
| **2** | Water body | 0.41 | 10.50 |
| **3** | Grassland | 0.01 | 0.52 |
| **4** | Shrubland | 6.09 | 13.19 |
| **5** | Agriculture area | 0.39 | 24.27 |
| **6** | Built area | 0.07 | 6.85 |
| **7** | River bed | 1.72 | 8.21 |
| **Total** | | **550** | **343** |

### 3.4 Anti-poaching and Intelligence Gathering

Intelligence gathering is the first step towards an effective anti-poaching operation. Anti-Poaching Unit (APU) is established under CCO to counteract illegal activities in and around the Park. The APU concentrates in collecting information on illegal activities by coordinating concerning institutions such as security units and Divisional Forest Offices. APU also coordinates with locally hired community informants who hold substantial information on poaching and illegal trade of wildlife and timber smuggling. In addition to this, there are Community Based Anti-Poaching Units (CBAPUs) in all the BZUCs. These CBAPUs organize regular activities to raise awareness about consequences of involvement in poaching. The CBAPU activities of BaNP are also closely coordinated with BNP.

Anti-poaching operation based on intelligence is primary task to control wildlife offences. From fiscal year – 2071/72 to 2077/78, a total of 69 cases were registered as shown in Table 4. In 2077/78, a total of 16 cases were registered. Out of these 16 cases, 9 cases were registered in the park and 7 cases were registered in the district court.

**Table 4: Number of cases in different fiscal years**

| SN | Fiscal Year | Number of cases | Remarks |
|---|---|---|---|
| 1 | 2071/72 | 7 | |
| 2 | 2072/73 | 5 | |
| 3 | 2073/74 | 14 | |
| 4 | 2074/75 | 3 | |
| 5 | 2075/76 | 4 | |
| 6 | 2076/77 | 20 | |
| 7 | 2077/78 | 16 | 9 in park and 7 in court |
| | Total | 69 | |

### 3.5 Tourism and Interpretation

The park has become one of the popular destinations for elephant safari and Churia range hiking and for educational tour and pleasure trip particularly in mid-western region of the country. The number

of tourists has been in increasing trend from fiscal year 2073/74 to 2077/78 as shown in Table 5. In the last five years, a total of 974 national and international tourists visited the park. As the park is relatively new, the domestic tourists accounted for almost 97 percent. Tourists of SAARC and foreign countries were 16 and 17, respectively. In the latest fiscal year 2077/78, highest numbers of tourists were recorded. As the park is easily accessible, the number of tourists visiting the park is expected to rise every year.

The Park has diverse physiography, unique landscape, biodiversity and social cultural dimension of BZ provide plenty of attractions for tourism. There are many potential areas for tourism development in the Park. Jeep safari, elephant safari and jungle walk in specified areas could be major tourist attractions in the Park. Deuti Bajai temple of Deurali Dada, Jhakri Temple of Jhijhari churai dada and Kukurgauda are some of the culturally important places of BaNP. Homestay has been major attraction in the buffer zone. Similarly, cultural museum, cultural show and rafting and angling in Rapti and Babai rivers has major potential to be tourist attraction in the BZ.

**Table 5: Category wise visitors of BaNP in different fiscal years**

| SN | Fiscal Year | Tourist number | | | Total |
|---|---|---|---|---|---|
| | | Nepali | SAARC | Foreigner | |
| **1** | 2073/74 | 0 | 0 | 0 | 0 |
| **2** | 2074/75 | 0 | 0 | 2 | 2 |
| **3** | 2075/76 | 148 | 11 | 1 | 160 |
| **4** | 2076/77 | 357 | 2 | 11 | 370 |
| **5** | 2077/78 | 436 | 3 | 3 | 442 |

### 3.6 Research and Monitoring

The status of Churia conservation, drying of wetlands, removal and control of IAS (Invasive Alien Species), prey base studies and status of corridor connectivity have been top research priorities of BaNP. Similarly, monitoring of endangered and threatened species such as Tiger, Four horned antelope, etc. are in top priority. A handful of research activities have only been carried in the park regarding wildlife. Those research includes tiger prey base monitoring, population distribution of FHA, assessment of deadwood from biodiversity and carbon perspective from BaNP and assessment of human wildlife conflict. The park has done few research related activities in the past. There is a wide scope for the park to collaborate with national and international universities and conservation partners to conduct research and monitoring activities. The priority research and monitoring activities has been listed in Chapter 6.

Monitoring of the Park is done on a regular basis by the guard posts in their respective areas. A team comprising of park staffs and security forces carry out patrolling on a daily basis by different means such as real time SMART patrolling, walking, bicycles and vehicles. Real time SMART patrolling has been considered very effective tool for monitoring as the movement of security personnel at various locations is seen in real time. In addition to this, the teams send instant information on sightings of wildlife and any illegal activities inside the park. Whenever deemed necessary, the frequency of patrolling is increased. The CCO and Army commander visit posts separately or jointly to observe physical facility and to motivate the staffs.

### 3.7 Human Wildlife Conflict

Human wildlife conflict (HWC) is one of the major issues of the park and is expected to increase with the increase in wildlife number in the park and buffer zone. HWC will also increase along the Kamdi corridor that links BaNP with SWS, India. Common leopard is killing domestic animals that include cattle, goats, sheep, and pigs. Similarly, the number of tiger has been increasing mani-fold in the park and the conflict is obvious in some point. Agricultural crop damage by wildlife is a major cause of HWCs. Major crop-damaging wildlife are wild boar, monkey and spotted deer. Human-wildlife conflict is an issue to be addressed effectively and efficiently. In the last three fiscal year, a total of Rss. 13662864 has been disbursed as relief amount as given in Table 6. The relief amount was disbursed based on Relief Guideline, 2069.

**Table 6: Relief amount distributed in different fiscal years**

| SN | Fiscal years | Relief amount disbursed in rupees (Rs) |
|---|---|---|
| **1** | 2076/77 | 5383363 |
| **2** | 2077/78 | 4571366 |
| **3** | 2078/79 | 3708135 |
| **Total** | | 13662864 |

### 3.8 Administration and Organisation

The administration of the park is headed by CCO. Under the CCO, there are 3 Assistant Conservation Officers (ACOs). Two ACOs lead sectors which are located at Kohalpur (western), and Kusum (eastern), whereas one ACO is responsible to look after BZ and monitoring section at headquarter. These sectors provide administrative and technical support as assigned by the headquarter. The ACOs are supported by Rangers who supervises Range posts and communicate with BZ communities and implement Park management and protection activities. The smallest administration unit of the Park is the guard post which is managed by Senior Game Scout or Game Scout and delivers the work assigned by Range post. Similarly, there is a BZMC (Buffer Zone Management Committee) to implement BZ program. The BZMC manages the funds received from the park. The CCO serves as member secretary of the BZMC and provides technical support.

The total number of staffs required to run the BaNP is 153. Out of 153 approved staff position, 119 are fulfilled whereas 34 staff position are vacant. There are 32 approved staff position for Hattisar management where 20 staff positions are vacant. The organization structure of the park is given in Table 7.

**Table 7: Organisation of the BaNP Staffs**

| S.N. | Designation | Level | Approved Position | Status of fulfillment | |
|---|---|---|---|---|---|
| | | | | Fulfilled | Vacant |
| 1 | Chief Conservation Officer | Gazetted class II | 1 | 1 | 0 |
| 2 | Assistant Conservation Officer | Gazetted class III | 3 | 3 | 0 |
| 3 | Ranger | Non- Gazetted class I | 11 | 10 | 1 |
| 4 | Nayab Subba (Administration) | Non -Gazetted class I | 1 | 1 | 0 |

| S.N. | Designation | Level | Approved Position | Status of fulfillment | |
|---|---|---|---|---|---|
| | | | | Fulfilled | Vacant |
| 5 | Nayab Subba ( legal) | Non -Gazetted class I | 1 | 1 | 0 |
| 6 | Accountant | Non -Gazetted class I | 1 | 1 | 0 |
| 7 | Computer Operator | Non -Gazetted class I | 1 | 1 | 0 |
| 8 | Kharidar | Non -Gazetted class II | 5 | 3 | 2 |
| 9 | Nayab Subba (Hattisar) | Non- Gazetted class I | 1 | 1 | 0 |
| 10 | Daroga (Hattisar) | Non -Gazetted class II | 1 | 1 | 0 |
| 11 | Fanit (Hattisar) | Class less | 10 | 0 | 10 |
| 12 | Pachhuwa (Hattisar) | Class less | 10 | 0 | 10 |
| 13 | Mahut (Hattisar) | Class less | 10 | 10 | 0 |
| 14 | Senior Game scout | Non- Gazetted class II | 23 | 18 | 5 |
| 15 | Game Scout | Class less | 69 | 64 | 5 |
| 16 | Office Assistant | Class less | 2 | 2 | 0* |
| 17 | Driver | Class less | 3 | 3 | 0* |
| | Total | | 153 | 119 | 34 |

## 3.9 Achievement of Preceding Management Plan

This is the second management plan of BaNP. The first management plan period was from 2075/76 to 2079/80. The first management plan was formulated to achieve five major objectives – To protect and conserve biological diversity of the Park; To manage and enhance habitat of both predator and prey base species; To promote tourism in the Park and its BZ; To intensify local communities' engagement in biodiversity conservation and; To strengthen institutional capacity to carry out integrated conservation and development activities through research, training and cooperation among stakeholders.

As a relatively new protected area of the country, the first management plan has been successful in conserving and increasing the population of tigers, which further ensures the conservation of other important wildlife species in the park. For the protection of the park, an adequate number of park offices and security posts were constructed. During this period, local communities were actively engaged in conservation activities and other events, which shows the coordination between park and BZ communities. Forest cover was significantly increased. Despite the following accomplishments, the overarching problems of water scarcity, human-wildlife conflict, relief disbursement, the spread of invasive alien species, road kills, grassland coverage, climate change, and capacity building of BZ institutions were not met during this period. Also, wildlife research and infrastructure development for ecotourism have not been addressed adequately.

### 3.9.1 Change in Land Use and Land Cover

There are significant changes in the land use cover in the decadal period (2010-20) as shown in Table 8. The area covered by forests in the core and buffer zones has risen as shown in Figure 11. This is primarily owing to the transition of grassland and shrubland to forest. Furthermore, the land class of

water body has increased over the decadal period in both the core and buffer zones. This demonstrates the success of forest protection by all BaNP and BZ partners during this decadal period.

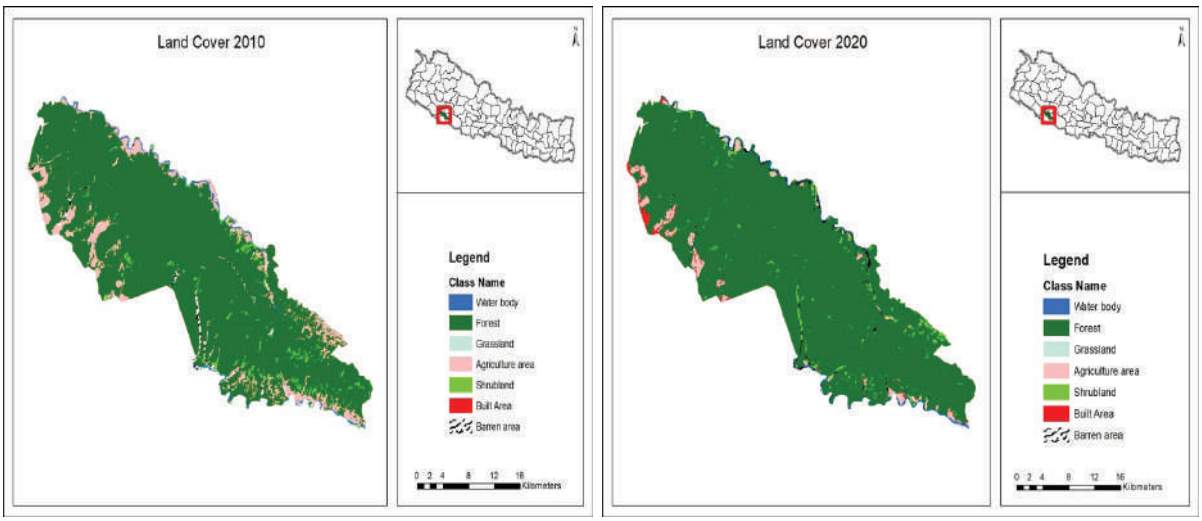



**Figure 11: Land Use Cover of BaNP in 2010 and 2020**

**Table 8: Differences in land uses in 2020 and 2010**

| SN | Land Classes | 2010 | | 2020 | | Difference | |
|---|---|---|---|---|---|---|---|
| | | Core (sq. km.) | BZ (sq. km.) | Core (sq. km.) | BZ (sq. km.) | Core (sq. km.) | BZ (sq. km.) |
| 1 | Forest | 508.32 | 245.88 | 541.32 | 279.47 | 33.00 | 33.58 |
| 2 | Water body | 0.05 | 9.30 | 0.41 | 10.50 | 0.36 | 1.20 |
| 3 | Grassland | 8.38 | 6.71 | 0.01 | 0.52 | -8.37 | -6.20 |
| 4 | Shrub land | 25.87 | 26.21 | 6.09 | 13.19 | -19.78 | -13.02 |
| 5 | Agriculture area | 1.23 | 35.31 | 0.39 | 24.27 | -0.85 | -11.05 |
| 6 | Built area | 0.13 | 5.81 | 0.07 | 6.85 | -0.06 | 1.04 |
| 7 | River bed | 6.01 | 13.77 | 1.72 | 8.21 | -4.30 | -5.56 |
| **Total** | | **550** | **343** | **550** | **343** | | |

In the previous management plan period, forest restoration activities were successful resulting in the increased number of wildlife population. However, this management plan period could not sufficiently address the tourism sustainability and research activities were minimal. Also, climate change adaptation and mitigation activities were minimal. The second management plan will try to fulfill these gaps along with other conservation activities.

## 3.10 SWOT Analysis of BaNP

### 3.10.1 Strengths

- Accessible location of the Park from Kathmandu, Butwal and Nepalgunj
- Unique ecosystem, great biodiversity, and valuable wildlife
- Home to FHA and Royal Bengal Tiger that draws attention of GoN along with global community for its conservation
- Potential for Nature based tourism destination (Churia hiking, home stay and elephant safari) and very near to the border of India to attract international tourists

- Well organized institutional arrangement to conduct conservation programmes and security of the Park
- Variety and ethnic richness in indigenous community with traditional culture and specialties
- Encouraging partnership with local communities and stakeholders, including national and global conservation organizations

### 3.10.2 Weaknesses

- Poor institutionalization of the conservation institution of the park
- Water availability all round the year
- Insufficient tourism resources as well as infrastructures such as information centre, ticket counter, entrance gate etc.
- Dependency of local communities in Park and BZ resources
- Inadeqate habitat for important mega fauna such as tiger, elephant and FHA
- Poor level of conservation awareness among BZ communities
- Very short north-south span and very long east-west stretch of Park
- Information gap on ecosystems and species
- Poor communication and internet facility
- Poor awareness and capacity building of communities

### 3.10.3 Opportunities

- Increasing the important wildlife population of tiger, elephant and FHA
- Potential site for the nature based tourism to generate revenue by developing tourism infrastructure for national and international visitors
- Maintain good relationship between local people and BaNP authority through people's participation in biodiversity conservation
- Increasing the wildlife habitat through extension of the park area
- Research on wildlife and its related aspects
- Livelihood improvement through BZ programs

### 3.10.4 Threats

- High frequency of forest fire
- Long stretch of highway running through the park
- High number of road kills of wildlife in East West highway and Kohalpur-Surkhet road
- Proximity to city and human settlements
- Increasing trend of human-wildlife conflict
- Climate change impact on important habitats of wildlife
- Drowning of wild animals in Sikta Irrigation Canal
- Urbanization of BZ
- Poaching and illegal trade of wildlife and
- Spread of Invasive Alien Species

# Part B

# The Proposed Management Plan

# Vision, Goal and Objectives

CHAPTER 4

## 4.1 Statement of Vision

The vision of BaNP and its BZ management is to enhance ecological integrity of the park to ensure well-being of the people.

## 4.2 Management Goal

The goal of BaNP and BZ management is to conserve wildlife and contribute to livelihood improvement of local people.

## 4.3 Management Objectives

- To protect and conserve biological diversity of the park with special focus on nationally protected and globally threatened wildlife species
- To manage wildlife habitat to maintain ecological functions and processes of Tarai and Churia region
- To improve community livelihood through nature based tourism promotion and other large scale onfarm and off-farm green enterprises
- To strengthen institutional capacity to carry out management activities through research, capacity building and cooperation among stakeholders.

## 4.4 Major Challenges/Issues

The park is relatively a younger protected area. Being a new park, lot of management work is yet to be done in different ecological and social aspects. The parks encompasses several challenges/issues which are categorized into ecological, habitat, social and management issues and is given below:

**Ecological Issues**

- No perennial river system passing through the core area of the park
- Forest fires during dry season
- Climate change induced disasters such as flash floods
- Spread of Invasive Alien Species

**Habitat Issues**

- Insignificant grassland coverage
- Inadequate waterholes for retaining water year round for wildlife
- Short north-south span and long east-west stretch make it hard to hold wild animals inside the core area of the Park
- Drowning of wildlife in Sikta Irrigation Canal

**Social Issues**

- Increasing human-wildlife conflict
- Encroachment for settlement and agricultural practices
- More than half BZ households have no land ownership certificate
- Inadequate conservation awareness of BZ community

**Management Issues**

- Poor institutialization of conservation institutions
- Road accidents of killing wild animals while crossing highway from the park to national forests and vice-versa
- Inadequate infrastructural development for promotion and regulation of tourism
- Poaching and illegal wildlife trade
- Inadequate infrastructure for BZ institutions as well as their capacity building

# Management Strategies

5
CHAPTER

## 5.1 Boundaries

### 5.1.1 Legal

The boundary of BaNP is well defined and duly notified with the publication in Nepal gazette on Ashadh 28, 2067 B.S. (12 July 2010). The area of BZ is also well demarcated on ground with natural landmarks such as rivers, ridges and other land features (Annex VI).

### 5.1.2 Administrative

BaNP is headed by under-secretary (Tech) level CCO, stationed at the headquarter, and responsible for overall management. The headquarter of the Park has technical, administration and financial sections. As per new organization & management structure, there are 153 approved posts that include position of elephant management as well. Out of the approved position only 129 positions are fulfilled. Administration and finance is operated as per the prevailing government norms, policies and regulation and the CCO is supported by Administration Assistants and Finance Assistant who are deployed by Administration Services and Finsncial Comptroller General Office, respectively. The skills and knowledge of administration and financial staffs are enhanced regularly, through various trainings, to deliver the output more effectively and efficiently. Good governance will be maintained from guard posts, range posts, sectors and up to headquarters by making the staff accountable in their duty. Every year, the staffs are appreciated or rewarded for their good performance to promote good administration. Similarly, the staffs are provided uniform, ration and field gears to motivate to deliver services effectively.

### 5.1.3 Ecological

The Park is located in tropical and sub-tropical ecological zones, as well as the Churia, Bhabar (a thin stretch of gently sloping southern foothills of the Churia hills), and Tarai physiographic regions of Nepal. The Park is contiguous to BNP in the west and facilitates genetic exchange and gene flow amongst PA's wildlife populations. Babai River, a functional river corridor for long ranging animals is north of the park and flows through BNP. Similarly, it connects to India's KWS and SWS through the BNP and Kamdi corridors, forming a larger TCU that provides a better chance for species' long-term survival, particularly for free-ranging large mammals such as tigers, wild elephants, and other rare and endangered species.

## 5.2 Zonation

Zonation is an ideal management tool that enables the spatial management of a PA to achieve both protection of the area's key ecological features and management of sensitive habitats, alongside sustainable utilization of the area for tourism and other uses. The objective of management zoning system is to maintain different levels of use and protection according to the identified zone to best maintain the values for which the PA is established. Important prime habitats of endangered species

especially tiger habitat should be kept undisturbed to increase their population. Although, BaNP has not adopted zoning so far, primary factors in establishing the zonation plan are the need to protect especially fragile and vulnerable habitats and the need to manage and mitigate human impacts. In order to achieve different management objectives in different parts of the Park, four main zone types have been identified.

### 5.2.1 Management Facility Zone

This is the zone inside park occupied by the infrastructures developed for administration, protection units and accommodation for staffs including Hattisar. It also comprises area occupied by Park headquarter and army offices together with sectors, range posts and guard posts established at strategic locations.

### 5.2.2 No Infrastructure Zone

In this zone, infrastructural development will be prohibited. The main objective of this zone will be to protect and maintain the wildlife habitat and ecosystem in its natural state.

### 5.2.3 Utility Zone

This zone is allocated for limited recreational activities for the visitors along with nature interpretation services for conservation awareness, such as hotels, religious sites, fire line, jungle drive and elephant ride routes, jungle walk routes, and public work installation areas. The main objective of managing this zone is to regulate tourism in the core area by minimizing the disturbance to wildlife and its habitat and to enhance visitor's satisfaction through providing wilderness experience.

### 5.2.4 Core Zone

The area of Park apart from facility zone and utility zone are set out as core area. It is wilderness area which includes all parts of the Park, except for management facility zone and utility zone. The key objective of this zone is protection and maintenance of the natural state of ecosystems and provides suitable habitat for wildlife and to encourage research and science-based management intervention. By legal definition, core zone refers to 550 $km^2$ of the park area where regulated tourism activities are permitted.

### 5.2.5 Buffer Zone

This is the area surrounding the core area which includes all the Buffer Zone Community Forests, settlements, agricultural lands, public lands and private forests, where environment-friendly development activities will be carried out to reduce dependency of people on forest resources and improve their livelihood. Buffer zone and its management has been detailed in Chapter 10.

## 5.3 Theme Plans

### 5.3.1 Park Protection

**Status**

Nepal has a long history of conservation of biological diversity and therefore is a party nation to different international treaties such as Ramsar convention, CITES, CBD, UNFCCC and any more. These conventions focus on different aspects of biodiversity and are global and multilateral in scope but implemented by member countries at local level. BaNP will follow activities that do not contradict with these conventions and will contribute towards the fulfillment of goals of these conventions.

Poaching of wildlife for meat, skin, horn etc. are the main threats in BaNP. Unless there is no effective Park protection, any other means of conservation would not make the conservation success. Park protection is one of the important activities of entire Park management. Nepal Army has been deployed in the protection to enforce NPWC Act, 2029 and subsequent conservation legislation. Park protection has been undertaken by a battalion of Nepal Army at BaNP. The battalion, headed by Lieutenant Colonel, has its headquarters at Obhari and one company in Chisapani, Kohalpur and Kusum. Similarly, there are 22 security posts at strategic locations to guard and secure the core area (Annex VII). Some of the security posts are jointly hosted by Park staff for administrative and technical tasks. Staff/Army deployed in these posts patrol their respective areas regularly to ensure that there are no illegal activities in the core area and BZ of the Park. Patrolling is done either on foot or by using bicycle, motorcycle, four-wheeler or elephant depending upon the situation.

Nepal achieved its first zero-poaching for rhino in 2011. The trend of zero poaching continued in subsequent years. Zero Poaching is the reduction of poaching to such low levels that there are no visible traces of poaching and there are no negative effects on the population of a species. Nepal became the host country for the Asia Symposium: Towards Zero Poaching because of these efforts. There are six pillars of zero poaching: assessment of current site enforcement, adoption of new tools and technology, institutional capacity building including staffing, strengthening prosecution process, increasing the participation of local communities and partners, and enhancing national and regional cooperation. As a habitat for tigers and wild elephants, BaNP will conduct activities in accordance with the six pillars of zero poaching and contribute to the reducing of poaching and illegal wildlife activities in the park.

#### *5.3.1.1 Mobilization of Nepal Army*

**Issues**

- Inadequate all weathered road network for all season patrolling
- Insufficient infrastructures
- Poor condition of security posts

**Strategies**

- Improve infrastructure for mobility and accommodation in the parts of park for all seasons
- Coordinate with line department for logistics support

**Activities**

- Maintain all the existing range and security posts regularly
- Develop all the range and security posts with accommodation facility and power supplies
- Construct joint posts at strategic locations
- Construct infrastructure to deploy army and park staff
- Conduct orientation on biodiversity conservation and controlling poaching to newly deputed security units
- Boat patrolling in Rapti and Babai river
- Increase surveillance using spy camera at strategic locations and use of drone for patrolling in strategic areas
- Continue surveillance across the highway using CCTV
- Continue SMART patrolling in the park area

- Construct watch tower in the core area
- Extend the forest roads to cover every nook and corners of the park

#### *5.3.1.2 Hattisar Management*

**Issues**

- Poor infrastructure facilities
- Shortage of natural food, fodder and water during dry season
- Potential HEC
- Likely occurrence of zoonotic diseases

**Strategies**

- Buikd sufficient physical infrastructure
- Promote planting fodder species in public lands and BZCFs
- Mitigate HEC
- Regular health care of animals

**Activities**

- Construct different physical infrastructure (buildings for staff, shed house, grain store house, water storage facility etc) to support Hattisar management
- Establish new Hattisar at East Gavar area
- Conduct biophysical and social survey to assess fodder availability in the core area
- Encourage fodder species plantation in stream banks
- Construct power fence enclosure and concrete boundary wall for Hattisar complex
- Administer medicine and provide supplement vitamins to elephants
- Conduct health checkup at least twice in a year
- Construct solar fencing at different stragetic locations

#### *5.3.1.3 Anti-Poaching and Intelligence Gathering*

**Issues**

- Poaching and illegal trade of wildlife and its derivatives
- Illegal logging and riverbed material excavation
- Retaliatory killings

**Strategies**

- Strengthen District Level Wildlife Crime Control Bureau (WCCB)
- Mobilize Community Based Anti-Poaching Units in all BZUC
- Operationalize anti-poaching unit and Rapid Response Team (RRT)

**Activities**

- Conduct periodic WCCB meeting
- Mobilize informants at different strategic locations

- Provide capacity building training to anti-poaching unit and RRT
- Provide basic equipment, vehicle and logistics to anti-poaching unit and RRT
- Mobilize CBAPU and its network
- Encourage and mobilize eco clubs and local youth clubs against illegal activities
- Launch patrolling i.e. SRP/MRP/LRP, sweep operation, smart, river/boat patrolling, camping, elephant based patrolling, informant mobilization)
- Disseminate information to BZ communities against wildlife crime
- Continue awareness programmes to youth, community and stakeholders
- Prepare database regarding wildlife crime for decision making

### 5.3.2 Habitat Management

**Status**

Effective grassland and wetland management is very important for food and water availability for wild animals. Habitat management is largely dependent on the removal of large number of livestock and the management of grazing pressure for which alternative grazing lands and livestock improvement program in the community areas are important prerequisites. One of the major concerns is that the domestic livestock entering the wildlife core habitat should be controlled with active support of BZ communities and institutions.

Though there are several grasslands in the Park, most of them are degraded as they are invaded by invasive alien species and woody vegetation. Proper maintenance of grass land will help in the increase of prey base for tiger. Some of the degraded wetlands in the area like Tharu bas, Tirtire, Jethi nala, Giddheni Chaur, Jhijhiri Khola, Baghshal Khola, Lute paani, Thuriya Khola, Kaala pani, Khairi Khola, Aghaiya, Rolpali Khola, Bhatte Khola, Bairiya Khola, Oz Khola need to be reclaimed whereas some other wetlands and ponds like Giddheni Chaur, Buchapur, Obhari, Sukai khola, Thuriya khola, Khairi khola, Aghaiya, Gotheri, Bhatte khola, Bairiya need to be maintained. Most of the wetlands dry up in the summer season and therefore proper restoration and maintenance of the wetlands are also very essential for long ranging and migratory wild animals like elephant.

Due to the narrow north-south and long east and west stretch, the habitat in the BZ and national forest are also equally important to provide wildlife as an extended habitat. Apart from this Kamdi corridor, which falls under DFO management, is an important corridor for the movement of wildlife from BaNP to SWS of India due to availability of water. Recent tiger survey in BaNP revealed extensive use of Kamdi corridor forest by tigers to move between BaNP and SWS.

#### *5.3.2.1 Forests*

**Issues**

- Invasion of invasive alien species
- Potential degradation of forest due to fire and grazing

**Strategies**

- Develop preventive as well as control measures to address uncontrolled forest fire
- Discourage open grazing through law enforcement
- Support community for improved breed live-stock husbandry
- Pilot methods to control invasive species

**Activities**

- Apply mechanical/ manual methods to uproot and burn invasive species periodically
- Regular patrolling in fringe area to discourage open grazing
- Conduct orientation program to live stock holders/herders to restrict grazing in the BZCF
- Sensitize BZ communities for possible HWC in the fringe area
- Extend fire line networks to confine forest fire in a particular block
- Maintain fire line network for easy accessibility for fire fighting
- Disseminate information of legal punishment for involvement in extraction of forest products from core area of the park
- Carry out control fire to support forest regeneration
- Coordinate livestock office and local authorities to introduce improved livestock breeding

#### *5.3.2.2 Grasslands*

**Issues**

- Insufficient grassland coverage
- Invasion of unpalatable species
- Dry prone area

**Strategies**

- Site selection to creat new  grasslands
- Prescribe management intervention of grassland at least twice a year
- Pilot methods to control invasive species
- Detail mapping of grassland including species composition
- Planning intervention based upon the status of grassland

**Activities**

- Create new grassland area at the suitable sites
- Manage previously developed grassland periodically
- Carry out effectiveness study of different management intervention in the grasslands
- Construct view tower, machan, to monitor grassland habitat use by wildlife and fire outbreak
- Establish permanent plot for ecological study of grassland habitat
- Apply mechanical/ manual methods to uproot and burn invasive species periodically
- Mapping of all the grasslands in both the Park and BZ and carry-out periodic monitoring to support management and decision-making
- Construct waterholes nearby grasslands

#### *5.3.2.3 Wetlands*

**Issues**

- No perennial source of water in the core areas
- Inadequate waterholes to retain water year round
- Smaller size and depth of waterhole could not retian rainwater for longer period

**Strategies**

- Restore the spring water source available in the core
- Planned cleaning and restoration of waterholes periodically
- Ensure water availability by rain water harvesting and solar power deep boring

**Activities**

- Maintain spring water source available in the park
- Install solar water pumps to recharge waterholes
- Maintain the existing small waterholes large enough to retain rain water for longer period
- Construct new large sized waterholes
- Construct large size water harvesting dams in Churia and series of checkdams across streams
- Conduct cleaning and removal of vegetation cover in the waterholes periodically
- Test water quality of water holes periodically
- Conduct mapping of wetlands and plan interventions according to their status

### 5.3.3 Fire Management

**Status**

The frequency of forest fires is one of the most significant conservation challenges in the BaNP. The park has extremely dry environment due to its topographic position and experiences forest fires causing incalculable damage to ecosystems and species in the park every year during the summer. More than 95% of the fire cases are caused by people's carelessness during cooking of meal using fuelwood by smugglers or throwing of burning match stick, cigarette by the local people while walking along the fireline. BaNP will combat forest fires using the strategies outlined in the Forest Fire Management Strategy, 2067.

To prevent the spread of fire, a network of fire lines has been established in the Park. Prior to the start of the dry season, the fireline must be routinely cleaned. Every year from March to May, the Park uses controlled burning as a management method to avoid forest fires and maintain wildlife habitats. Every guard post requires a team of Park and army personnel trained in fire management and equipped with fire-fighting equipment.

**Issues**

- High incidence of forest fire
- Long stretch of highway passing through the park boundary
- Dry prone area with more than half of the core area being Churia and Bhabar
- Lower rate of leaf litter decomposition
- No perennial river passing through the park
- Inadequate fire-fighting equipment
- Inadequate forest fire line
- Weak law enforcement against forest fire

**Strategies**

- Ensure stakeholder collaboration to address forest fire disaster
- Community sensitization against forest fire disaster
- Forest fire awareness through mass media communication
- Strengthening preparedness for fire fighting

**Activities**

- Intensify patrolling during dry season
- Strengthen law enforcement to punish the culprit who involved in forest fire
- Set up firefighting equipment in all posts
- Sensitize community against the fire disaster before the onset of fire season
- Provide firefighting training to frontline staff
- Erect signage along the highway at regular interval
- Prepare and keep detail record of fire occurrence locations manually
- Use RS and GIS tools and techniques to map fire prone areas spatially and temporally
- Install forest fire early warning systems
- Provide training to park staffs, security personnel and BZCF members for firefighting
- Construct and repair firelines in forest fire prone areas
- Cleaning of firelines in regular interval
- Form firefighting teams with the help of Park, BZUC, BZCFs and other local bodies
- Construct watch tower at strategic points of the park
- Mobilize fire-fighting team with equipment in order to stop spreading of fire in grasslands
- Undertake early burning of grasslands on the basis of burning regime and create firebreaks annually
- Carry out fire prevention education and awareness activities to the local community
- Provide thatch grass cutting to BZ community before onset of dry season
- Conduct awareness of forest fire through mass communication programmes (Radio, TV, newspaper)
- Use of drones to monitor early forest fire incidents

### 5.3.4 Wildlife Health Management

**Status**

It is very difficult to treat free ranging wild animals and control epidemic if disease outbreaks. Domestic cattle are potential carrier of diseases to the wild. In BaNP, many cattle enter illegally for grazing specially in summer season whereas wild animals also move into grasslands and wetlands of BZ and there are interactions between domestic and wildlife populations leading to increased interface. It is important to ensure that chances of transmission of zoonotic diseases between domestic and wild animals is minimized or eliminated. Hence, health monitoring of livestocks and surveillance of disease outbreaks should be done regularly. Besides, regular and timely immunization of domestic livestock around the park against frequently occured diseases is needed to prevent disease outbreak. Ferals dog

also cause considerable injury to wild animals. Further, road accidents are also resulting in injuries and deaths of wildlife along the highway.

**Issues**

- Potential risk of disease transmission
- Fatal injury due to feral dog bite
- Inadequate capacity to monitor and diagnose health issues in the park
- Inadequate wildlife medical facilities in the park
- No veterinary position in park and Hattisar organisation
- Livestock grazing in the fringe area of the park

**Strategies**

- Develop wildlife treatment centre and orphanage care facility
- Coordinate with the local government to control of feral dogs around the park area
- Discourage open livestock grazing through buffer zone institutions
- Strengthening the park office to deal with wildlife health
- Coordinate with law enforcement agencies such as custom offices, Nepal police, Armed Police Force, Local government, District Administration Office including Provincial Veterinary Directorate Office, District Veterinary Service Office for prevention and control of wildlife diseases

**Activities**

- Establish wildlife orphanage and rescue centre in at least two sectors
- Treat injured animal upon arrival at orphanage and rescue centre
- Provide timely medication to wounded / injured wildlife
- Support vaccination of livestock around the BZ through LSO
- Support for livestock husbandry (improved breed, vet services, grass cultivation, trough)
- Management of feral dogs in and around the Park (1 km buffer)
- Procure diagnostic accessories, medicine, wildlife ambulance and dart gun in the park
- Report and document mortality of wild animals immediately after it comes to notice of any staff as part of disease surveillance strategy
- Coordinate with LSO to undertake post-mortem of deceased endangered wild animals
- Carry out regular check-up of elephant at Hattisar and treat them accordingly
- Train staff to collect wildlife sample of blood, fecal matter, urine or vital organs
- Build capacity of frontline staff to recognize, record and report disease or poor health condition of animals
- Conduct awareness programme for controlling open grazing system
- Support student to study problem related to wildlife diseases and zoonotic diseases

### 5.3.5 Encroachment management

**Status**

Before the park's inception, the BZ was illegally inhabited and colonized. However, there is no encroachment within the park's core area. In the encroached areas, residents have constructed concrete homes and are cultivating land. It has grown increasingly difficult close to the east-west highway. Lack of clear demarcation, increase human population, migration from mid-hills to mountains, and human avarice are the primary causes of encroachment. Both the park and Divisional Forest Office must take coordinated measures and improve surveillance to counteract this occurrence. The plans will adhere to the Forest Encroachment Control and Management Strategy, 2068.

**Issues**

- Claims that they have been living there before establishment of the park
- Illegal settlers are deprived of relief amount against crop depredation
- Illegal settlements are more vulnerable to HWC
- Chance of extension of encroached areas

**Strategies**

- Develop measures to control further encroachment
- Sensitize agencies and people representatives about the gravity of land without ownership certificate

**Activities**

- Survey and mapping of encroached areas
- Maintain the database of the encroached area
- Demarcate park boundary physically
- Demarcate and fence BZCF as well as ailani land in the buffer zone
- Follow the forest encroachment control and management strategy, 2068 to evacuate the households illegally occupied forest land
- Plant and restore of fence open areas
- Conduct extension programmes against forest land encroachment
- Conduct series of interaction programmes with people representatives and politicians about the issues of encroachment
- Inform department and line ministry about the issues of households without land ownership certificate and its impact on conservation
- Monitoring and patrolling at strategic sites
- Proceed timely action against encroachers

# Research, Monitoring and Capacity Building

6
CHAPTER

In an era of widespread biodiversity loss, land degradation, climate change, and risks to human livelihoods, the most common research needs are to determine whether, how, and to what extent protected areas might aid in responding to these concerns. To successfully inform conservation priorities and design effective conservation measures and management strategies, it is necessary to understand the socio-ecological systems of the park and its buffer zone, biology of wildlife species, assess the impact of biodiversity loss and monitor changes in species communities. In the context of protected area management in Nepal, it is necessary to engage with research and academic institutions to ensure adequate utilization of research in the design of appropriate conservation and management actions within the park and its buffer zone.

Few researches have been carried out in BaNP and its buffer zone by students and researchers as a part of their academic dissertation, thesis or research project. These researches were limited to population distribution of four horned antelope, Prey base monitoring of tiger, human wildlife conflict and assessment of deadwood from biodiversity and carbon prospective from the BaNP. The research is mostly determined by the interest of the individual researcher. Therefore, the research should be aligned to the need of BaNP collaborating with different academic institutions and conservation partners.

## 6.1 Research

BaNP is important habitat for tiger, elephant and FHA, therefore the research relating to these species will be in priority. The researches will be set to focus on important wildlife species and also to fulfill the past research gaps of the BaNP.

**Issues**

- Inadequate researches and regular monitoring of wildlife species
- Inadequate facilities and equipment for conducting researches
- No research conducted related to climate change vulnerability assessment of important species, ecosystem and indigenous communities
- Inadequate research related to socio-economic impact of conservation activities

**Strategies**

- Infrastructure development for carrying out research activities
- Collaboration with academic institutions and conservation partners
- Develop monitoring protocol for major wildlife species

**Theme wise research priority**

**Species conservation**

- Update information on list of flora and fauna of BaNP
- Population distribution and regeneration status of threatened plant species of BaNP

- Compile all available scientific information on tigers and prey species focusing ecological, methodological and human impact topics
- Undertake intensive research on transboundary movement of tigers and the use of corridors
- Study distribution and abundance of various prey base species
- Study spatial distribution and abundance of four horned antelope, hyaena and golden monitor lizard
- Genetic study of key wildlife species such as tiger and four-horned antelope
- Population dynamics, habitat use and resource partitioning of sympatric wildlife species
- Behavioral and habitat ecology of important herpetofaunas (Python and golden monitor lizard)
- Update digital database maps using latest topo-sheets, satellite imageries and aerial photographs for updating tiger information
- Status and threats of different fish species
- Status of Gharial and Mugger crocodile in Rapti river
- Status and abundance of turtle
- Undertake detailed studies on ungulate-habitat relationships and the feeding behavior of ungulates
- Movement and ranging behavior of elephant with special focus on human-wildlife conflict
- Study of captive held elephant diseases and behavior
- Least studied species and its habitat like small mammals (mouse, rat, shrew, bat etc.), herpetofauna (python and golden monitor lizard), butterfly, insects, fish etc.
- Study population status of Swamp francolin, Bengal florican, Black stork, White stork, Vulture and their respective habitats
- Pattern and trend of bird migration; migratory birds both general and species-wise
- Assessment of impact of sikta irrigation canal on wildlife species
- Assessment the impact east-west highway on wildlife species
- Feasibility study for introduction of Dolphin in Bheri River
- Feasibility study for introduction of Gaur in BaNP

**Habitat management**

- Vegetation dynamics and its impact on wildlife habitat
- Grassland management practices and its impact on conservation
- Prepare land use management plans for critical habitats of tigers in the Park and BZ
- Impact of fencing on population distribution of wildlife species
- Spatial and Temporal pattern of fire incidences in BaNP and its BZ
- Prepare fire management and action plan for mitigating the effects of forest fire on wildlife
- Carry out wetlands and grasslands mapping and assess their successional dynamics to inform management prescriptions
- Study distribution and abundance of palatable grass species
- Undertake study to identify the succession pattern of grasslands, forests and wetlands
- Conduct study on the effect of habitat fragmentation and degradation on wildlife survival
- Study and document indigenous knowledge, skills and practices for wetland conservation

**Tourism**

- Document perception of visitors about the tourism facilities and services from hotels and Park authorities
- Study to identify potential tourism products and their packaging
- Aspiration of hotel operators regarding services and cooperation from the Park
- Conduct study to identify potential site to promote homestay
- Impact of Banke National Park at local and national level in one decade

**Climate change and livelihood**

- Carry out research on possible impacts of climate change on wildlife population
- Identification and monitoring of climate sensitive species on a long-term
- Vulnerability assessment of small-holder farmers against climate change
- Vulnerability assessment of important ecosystem of BaNP and its BZ
- Vulnerability assessment of threatened plant and animal species
- Vulnerability assessment of indigenous communities against climate change
- Prepare BZ community-based adaptation plan
- Study on impact of climate change on major ecosystem services
- Assessment of Traditional Ecological Knowledge of the park and its BZ

## 6.2 Monitoring

**Species monitoring**

- Monitoring of tiger and other predators on periodic basis based on camera trap in core area, buffer zone and Kamdi corridor.
- Monitor tigers around the BZ with local community engagement
- Monitoring of four horned antelope on periodic basis based on direct count
- Monitoring of indicator species such as frogs and toads
- Monitor prey base species on regular interval
- Monitoring of small mammals
- Monitoring of reptiles
- Monitoring of globally threatened and nationally protected birds

**Habitat monitoring**

- Periodic grassland monitoring
- Periodic forests cover monitoring
- Monitor impacts of floods and extended droughts on wildlife habitats
- Periodic wetlands and water holes monitoring including water quality
- Monitor spatial and temporal pattern of fire incidence
- Monitor fire and fuel dynamics
- Monitor extraction of soil, sand and gravel in coordination with local authority

**Wildlife Health monitoring**

- Periodic health monitoring of captive elephants in Hattisar

**Tourism monitoring**

- Periodic monitoring of tourism impact on ecological and social environment
- Periodic monitoring of impact of tourism on socio-economic conditions of BZ communities

### 6.3 Capacity Building

- Refreshment trainings to the field staffs and security personnel about patrolling
- Orientation training to frontline staff on legal issues
- Training on Real-time SMART patrolling to Park staff and security personnel
- Conduct anti-poaching operation trainings to Park staffs, security personnel and CBAPUs
- Conduct crime scene investigation and interrogation trainings to investigators as per legal provision;
- Human rights training to handle the accused people
- Provide training to mid-level technical staff on wildlife monitoring and handling techniques, GPS, GIS, SMART, and habitat monitoring
- Basic training on vegetation analysis for recording data in monitoring plots
- Conduct forest fire management training to the Park staffs, security personnel and BZCF members
- Provide veterinary care and treatment training to veterinary assistant
- Provide social mobilization and participatory planning training to staff
- Provide training to rangers and officers on CITES Act implementation
- Provide exposure visit to Rangers and Officers to other protected areas
- Provide refresher training to Hattisar Staff on elephant mobilization, tourism hospitality, elephant healthcare, elephant patrol
- Provide trainings to nature guides to enhance their capacity in nature interpretation specifically on wildlife, birds and plants
- Conflict management training
- Community-based climate vulnerability assessment and adaptation planning training
- Provide conservation awareness training to BZUGs, BZUCs and BZMC members
- Provide leadership training to BZUCs and BZMCs members
- Provide account and record keeping training to BZUCs and BZMCs members

# Species Conservation Special Program

CHAPTER 7

## 7.1 Royal Bengal Tiger

**Status** (IUCN: Endangered, CITES: *Appendix I*; NPWC Act: Protected)

The Tiger (*Panthera tigris*) is a top predator in the terrestrial ecology, and its survival is in jeopardy across its habitat. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species lists the species as endangered, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora lists it as Appendix-I species. Similarly, the Government of Nepal has listed the tiger as a protected wildlife under the National Parks and Wildlife Conservation Act, 1973.

The first, second, third and fourth nationwide assessments carried out in 2009, 2013, 2018 and 2022 estimated 121, 198, 235 and 355 tigers, respectively. In BaNP and adjoining forests, tiger population has increased by more than five-fold i.e. from 4 (3-7) tigers in 2013 to 21 (18-30) tigers in 2018 (P =0.001) (DNPWC and DFSC, 2018). In 2022, the population of tiger was estimated to be 25 i.e., increment of 4 tigers from previous tiger census.

### Significance

Hotspot for growth of tiger population/One of the important habitat for tiger population in Nepal

Nepal is a transit country for the illegal trade between India and China, and also a country of origin of tiger parts. The tiger faces the risk of terminal extinction particularly from threats of poaching and illegal trade, and inadequacy of suitable habitat resulted from loss, fragmentation and degradation of the forests. However, conservation of tiger is vital for ecological health; its conservation in human dominated landscape is demanding as it requires large and inviolate areas for ensuring its long-term survival. Lowland areas such as Baghsal Khola, Jhijhari Khola, Khairee Khola, and Sukhar Khola area are important tiger habitats.

### Conservation Effort

Nepal is one of the collaborators of "Global Tiger Recovery Programme, (NTRP; 2010-2022)" that was endorsed in the St. Petersburg Declaration on Tiger Summit held in St. Petersburg, Russia on November 21-24, 2010. The declaration aims to double the number of tigers (Tx2) across their distribution range by 2022 and visualizes National Tiger Recovery Programme (NTRP) that outlines the urgent priority activities each Tiger Range Countries (TRC) will take to contribute the global goal.

Among the tiger range countries, Nepal has achieved remarkable successes in tiger conservation over the past five years. The national tiger survey results have shown a 63% increase in the tiger population between 2009 and 2013, approximately 19 % increase in the tiger population between 2013 and 2018, and 51 % increase between 2018 and 2022. It is landmark achievement for Nepal exceeing its national Tx2 goal with 355 number of tigers. The Nepal's conservation strategies to achieve this goal includes engagement with local communities, livelihood improvements and enhancement programs, partnerships with state and non-state conservation actors, institutional reforms from Community Based

Anti-Poaching Units (CBAPU) to National Tiger Conservation Committee (NTCC), and outreach (people to prime minister). These strategies have been producing positive results on the grounds, reflected in the 365 days of zero poaching for rhinos and reducing poaching of other wildlife as well. New initiatives such as the introduction of Real Time SMART patrolling have improved the success of park patrolling. Regular transboundary meetings with India and China and the establishment of the South Asia Wildlife Enforcement Network (SAWEN) have helped to coordinate trans-boundary law enforcement.

Poaching has been controlled outside the protected areas bringing all the LEAs under the Wildlife Crime Control Bureau, with offices established in 34 districts. Provisions of relief mechanisms and livelihood alternatives for families affected by wildlife attacks have greatly helped to encourage and develop stewardship in conserving wildlife species that interact with local communities. All these activities and programmes have underscored the government's commitment to meet its tiger conservation goal.

**Issues**

- Inadequate knowledge on tiger ecology including carrying capacity, predator-prey relations, demographic patterns and population dynamics
- Illegal trade of wildlife products due to porous boundary between Nepal and its neighbors
- Habitat degradation triggered by invasion of alien invasive species
- The existing and expanding physical infrastructures i.e. canal, highways and settlements
- Drying up of wetlands and waterholes
- Human Tiger Conflicts
- Under-equipped anti-poaching units, informants and intelligence networks
- Impact of climate change on Tiger and its prey species

**Strategies**

- Develop landscape approach of habitat management of tiger and prey base
- Improve and restore critical tiger and prey base habitat with a focus on grasslands and wetlands
- Collaborate with academic/conservation institutions to enhance knowledge and information on tiger and its prey base using scientific methods
- Build wildlife friendly physical infrastructures
- Strengthen institutional network and coordination for CITES enforcement to control illegal trade in wildlife and its derivatives
- Strengthen anti-poaching efforts and trans boundary cooperation at the central and field levels
- Develop alternatives to decrease forest dependency of local community
- Engage local communities (CBOs, NGOs, BZCF and other forest management regimes) in tiger conservation through livelihood improvement programme and human tiger conflict mitigation
- Develop information, education and communication strategy to address issues of poaching, road kills and human tiger conflicts
- Launch effective conservation education and awareness programmes

**Activities**

- Compile all available scientific information on tigers and prey species focusing ecological, methodological and human aspects that have management relevance

- Conduct study and research on tigers and its prey species by collaborating with national and international Universities
- Restore, maintain and manage grassland by uprooting and cleaning of invasive species to support a healthy population of tiger and prey species
- Construct water recharge pond and water harvesting dams in Churia and foothills to provide water for animals during dry seasons
- Update digital database maps using latest topo-sheets, satellite imageries and aerial photographs for updating tiger information
- Prepare land use plans for critical habitats of tigers outside PA and manage them on the basis of land use plans
- Erect signage of warning to the passersby in the major rights of ways, resource collection sites and shrines
- Celebrate world tiger day on 29th July every year and take opportunity to promote tiger conservation awareness during other ceremonies such as (Wildlife Week, Environment Day, Wetland Day, Earth Day, Biodiversity Day)
- Support livestock farming in collaboration with local government
- Support alternative to firewood to poor households of BZ community nearby forests
- Management of problematic tiger
- Conduct awareness campaigns at the local level
- Launch behavioral change campaign in forest edge communities

## 7.2 Four-horned Antelope

Status (IUCN: Vulnerable, CITES: *Appendix III*)

FHA (*Tetracerous quadricornis*) is listed as Vulnerable in IUCN Red List of Threatened Species and Appendix III of Convention on international trade in endangered species of wild fauna and flora (CITES). In Nepal, the National Parks and Wildlife Conservation act 1973 has listed this as a protected mammal species, making it a priority species for conservation. FHA is one of the least known mammalian species in Nepal and as such its management is largely hampered by lack of basic information on this species.

FHA has a wide distribution, which spread from the Himalayan foothills to peninsular India (Rahmani, 2001). At the landscape level, it uses tropical dry deciduous forest habitats (Baskaran *et al*., 2011). Its abundance and distribution are considerably affected by habitat changes because of local and landscape-level factors (Krishna *et al*., 2009). In Nepal this species has been recorded in Chitwan, Bardia and Banke National Parks and may also be found in small numbers outside reserves in the forested areas of Bara district (Pokharel, 2012). Four horned antelope is non-migratory and territorial species occupying restricted home ranges (Sharma & Rahmani, 2004). It is generally solitary in nature but sometimes can be seen in a small group of three to five (Sharma *et al*., 2009).

Four-horned antelope are mainly distributed in south-western part of the Park. A study has estimated a minimum population of 191± 45 individuals in the Park which could probably be the largest population in Nepal (Dahal and Kandel, 2013). The research has also identified that the grasslands and Sal forest with woody vine Bhorla (*Bauhinia vahlii)* are major habitats of Four-horned antelope.

**Significance**

One of the prime habitats of the species in Nepal

**Conservation efforts**

Because of the unique pairs of anterior and posterior horns, FHA has been prized as a hunting trophy; some sportsman consider its meat dry and not as palatable as that of other antelopes (Blanford, 1888; Nowak, 1991), but at least 1 claimed it to be "the best of any antelope or deer" (Phythian-Adams, 1951). Currently, FHA is protected in Nepal (Dahal and Kandel, 2013) and India (e.g., Indian Wildlife Protection Act, 1972: Sharma *et al*., 2005) and considered Vulnerable with decreasing population trends on the Red List of Threatened Species of the International Union for Conservation of Nature and Natural Resources.

The current population of FHA in Nepal is unknown but likely to be less than 2,500 individuals distributed in BNP, Chitwan National Park (CNP) and Parsa National Park (DNPWC, 2011). This species may be restricted to the Churia range of BaNP, BNP and areas around Banswari Khola.

**Issues**

- Limited ecological information of the species
- Illegal trade of wildlife products (skulls and horns)
- Loss of natural habitat with invasive species
- Drying of wetlands and water holes

**Strategies**

- Enhance understanding and knowledge about this lesser known species through assessments and research by collaborating with various national and international universities and conservation partners
- Strengthen trans boundary cooperation at the central and field levels to complement the efforts of controlling poaching of wildlife and smuggling of wildlife body parts
- Strengthen institutional network and coordination for CITES enforcement to control illegal trade in wildlife and its derivatives with particular reference to FHA
- Adopt habitat management based on action research findings

**Activities**

- Develop action plan to increase the grassland and shrub coverage
- Construct new waterholes and restore old ones at critical habitat sites
- Conduct invasive species control measures at critical habitat sites
- Increase awareness towards conservation of FHA
- Carry out spatial distribution and abundance study of FHA using appropriate tools and techniques
- Enforce strict regulation towards illegal wildlife trade
- Conduct awareness programmes related to FHA conservation to all relevant stakeholders

## 7.3 Elephant

**Status** (IUCN: Endangered, CITES: *Appendix I*, NPWC Act: Protected)

It is native to 13 Asian countries including Nepal, and is classified in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species as "Endangered" (Choudhury *et al*., 2008; IUCN, 2018) and appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 2022).This species is also protected by the National Parks and Wildlife Protection Act 1973, Nepal. Nepal has devoted legal protection to Asian elephants by listing them as protected species under the National Parks and Wildlife Conservation Act, 1973.

Wild elephants in Nepal occur in four isolated populations-eastern population in Koshi Tappu Wildlife Reserve and Jhapa district; central population in Chitwan National Park and Parsa National Park; western population in Bardia National Park and adjoining municipalities; and far-western population in Suklaphanta National Park and adjoining municipalities (NTNC, 2020).

Currently, there are around 200 to 250 wild elephants in Nepal. Of those elephants, 15-20 are in Jhapa, 17 are in Koshi Tappu Reserve, eight in Sindhuli, and 45-50 in Parsa and Chitwan National Park. Likewise, more than 100 elephants are in BNP, and 25-30 are in Suklaphanta National Park (Khadka, 2019).The number of resident wild Asian elephants in Nepal is currently estimated to be between 109 and 142 animals (DNPWC, 2012; Pradhan *et al*., 2011) with distribution concentrated in the central and eastern parts of the country in protected areas of the Tarai (low land) zone, with relatively low numbers in the west (Koirala et al., 2015). In four isolated populations (Eastern, Central, Western and far-western), they occur. The elephant-inhabited area is spread over 19 districts of Nepal (17 in the Tarai lowlands and 2 in the hills), covering approximately 10,982 $km^2$ of forest area (DNPWC, 2008). This wide spread and fragmented distribution of elephants in the Tarai highlights the importance of the need for planning for landscape level conservation as a strategy to protect elephants and humans by maintaining the country's forest corridors.

### Significance

Potential growing habitat for wild elephant

Asian elephants have great ecological and cultural significance throughout Asia (Sukumar, 2006). They are threatened throughout their range primarily due to habitat loss, human–elephant conflict and poaching for ivory (Jathanna *et al*., 2015). Asian elephants need large areas to fulfill their seasonal food and water requirement, which often leads to conflicts with humans (Sukumar, 1991; Hoare and Du Toit, 1999).

Elephants are among the world's most intelligent and sensitive animals and possess both empathy and self-awareness with whom we existed for centuries. They are also keystone species, playing an important role in maintaining the biodiversity of the ecosystems in which they live. Historically, forests of Tarai enabled elephants in the north and northeast India to be in one contiguous, large population. Undoubtedly, Tarai had a large resident population of elephant in the past.

### Conservation efforts

In the last three decades, Nepal has put its efforts at best to address endangered species conservation particularly mega vertebrates faunas like elephant and rhinoceros through a multi-prong approaches that include national strategies, action plans and land-based management activities. As a result, elephants in Nepal, are protected by stringent laws, enabling them to survive in their habitats in PAs and landscape level conservation measures of Nepal Government, that facilitate long-term survival and their free-

ranging habits. There is no elephant poaching but nearly two percent of the country's elephants die every year, largely due to conflicts with humans (Mandal, 2019). The government has been working for many years to conserve this endangered species from various ecological and social perspectives. Recognizing challenges in elephant conservation, the Government of Nepal supported "The Elephant Conservation Action Plan 2009-2018," a guidance document outlining the highest priority conservation activities in Nepal for the overall management of the elephant. The strategy aims at saving the elephants from extinction in the wild, resolving habitat destruction immediately and reducing related conflict between humans and elephants. Also, Nepal maintains captive elephants in Hattisar.

**Issues**

- Inadequate ecological and habitat suitability assessment of the species in the park
- Unavailability of sufficient habitat requirements such as water, food and cover inside the park to retain wild elephants
- Elephants travel farther in search of food and water that creates a chance of conflict with local people and damage agriculture crops propelling human elephant conflict (HEC)

**Strategy**

- Collaborate and coordinate with conservation partners and regional elephant experts for resource leverage and share information including research and study
- Provide sufficient habitat requirements such as water, food and cover inside the park to retain resident wild elephants
- Promote alternative land use practices and agriculture cropping systems and regulate relief mechanism efficiently to reduce HEC
- Coordinate with infrastructure development agencies for promoting elephant movement friendly infrastructure designs
- Increase awareness toward conservation of elephant

**Activities**

- Erect solar fence to prevent elephant strayed in the settlement especially in those areas where conflict is severe thereby reducing HEC
- Carry out piloting of early warning system of wild elephant straying nearby settlements
- Construct RCC watch towers at strategic location to monitor movement of wild elephant
- Provide subsidies for alternative agriculture crops which are unpalatable to elephant in the BZ
- Provide the relief to the victims of human loss, agriculture loss, and property loss by wild elephant
- Conduct conservation awareness activities to reduce HEC

# Eco-tourism and Interpretation

CHAPTER 8

## 8.1 Background

Ecotourism is a form of tourism that involves traveling to tranquil and unpolluted natural areas According to the definition and principles of ecotourism established by The International Ecotourism Society (TIES) in 1990, Ecotourism is "Responsible travel to natural areas that conserves the environment and improves the well-being of local people". Ecotourism is held as important by those who participate in it so that future generations may experience aspects of the environment relatively untouched by human intervention. It purports to educate the traveller, provide funds for ecological conservation, directly benefit the economic development and political empowerment of local communities and foster respect for different cultures and for human rights.

### 8.1.1 Tourism scenario

In BaNP, there is opportunity to experience nature tourism for visitors but there are very few tourism developments taking place due to lack of infrastructure and the systems for managing tourism which is not sufficient enough to contribute towards income generation of local people. Due to the small size of the park, future tourism facilities and infrastructure development will have to be developed outside of core area. Most of the permanent tourism infrastructure such as lodges and hotels can be developed in the BZ. Land requirements for such developments will have to be provided by local government outside the Park. Similarly, the Park can explore private investors to operate lodge, hotel and homestay and for this they can also acquire land from individual landowners on the willing-buyer-willing-seller basis. Similarly, tourism operators related with tour guide, elephant safari, jeep drive, boating, cultural show, museum related to local culture etc. can be promoted.

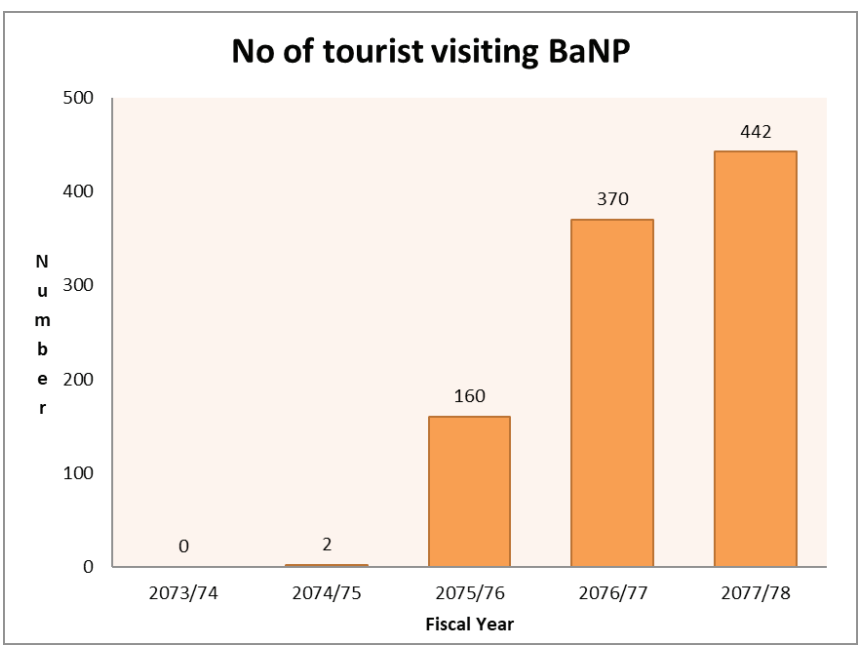



**Figure 12:** Number of visitors in different fiscal years

The park is yet to establish itself as major tourist destination. Few interventions have taken place for tourism promotion. It includes homestay, jeep safari, elephant safari and Churia hiking. There is more potential than these activities in the park. The increasing trend of visitors in the park has shown immense potential of the park to grow as tourist place. The trend of visitors in the park is shown in the Figure 12. Most of the park visitors are domestic tourists. Only a few percentages of the visitors are of SAARC and foreign origin.

### 8.1.2 Tourism infrastructure

#### Road networks

BaNP headquarter is on the highway which is around 20 km east of Kohalpur. There is 180 km of fireline which is built to break the fire from spreading and it is also used as access road. More firelines inside BaNP should be constructed for monitoring purpose which will also be used for regulated tourism. Similarly, access road as circular ring road just outside of the boundary should also be constructed for the use by local people and tourism purpose.

#### Communication

BaNP can be connected by mobile network of Nepal Telecom and N-cell. The mobile coverage in BaNP is satisfactory while internet facilities are also available.

#### Services

#### Accommodation and meals

There are hotels in Nepalgunj and Kohalpur but in the periphery of BaNP four homestays are imitiated to provide accommodation and food. The details of homestay are given in Table 9. More tourism operators should be encouraged to construct and run hotel outside of BaNP.

**Table 9: Details of homestay in the park**

| SN | Name of Homestay | Location | Date of Establishment | Total HHs number | Total capacity |
|---|---|---|---|---|---|
| 1 | Gabar Valley Homestay | Baijnath RM-1, Banke district, Lumbini Province | 2071 | 18 (44 rooms) | 88 |
| 2 | Khadakwar Namuna Community Homestay | Kohalpur UM-13,Banke district, Lumbini Province | 2075 | 7 (7 rooms) | 14 |
| 3 | Balapur Community Homestay | Rapti Sonari RM-8, Banke district, Lumbini Province | 2077 | 5 (5 rooms) | 5 |
| 4 | Mini Valley Community Homestay | Baijnath RM-1, Banke district, Lumbini Province | 2078 | 9 (18 rooms) | 36 |
| Total | | | | 39 (77 rooms) | 143 |

The potentials places for homestay establishment include Gabar, Khadakwar, Balapur, Ryang, Ghuiyabari, Hattidamar and Mini valley as shown in the Figure 13. These places will almost accomondate the tourists visiting BaNP for different purposes.

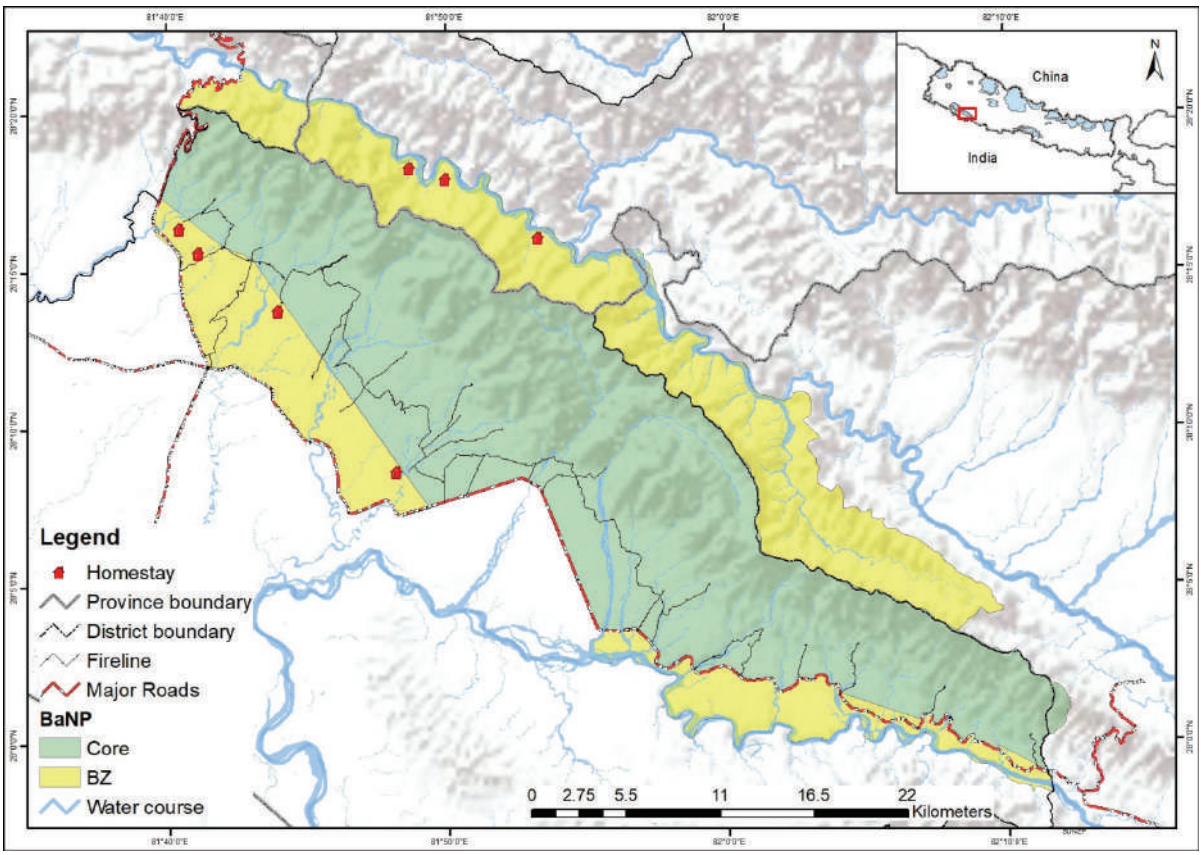



**Figure 13:** Potential places for homestay establishment

### Shopping

At present there is no specific outlet where visitors can buy souvenir or local handicraft items nearby BaNP. However, there are shops in Nepalgunj, which is 35 kms away from BaNP, where visitors can buy some local items. Few local people will be encouraged to operate shop in the surrounding area of the Park where visitors can buy some souvenirs and local crafts.

### Banks/ Currency Exchange

There are several branches of banks in Kohalpur and Nepalgunj and at least one bank will be contacted to operate ATM service nearby Obhari Park headquarter. Recently, Western Development Bank, Jyoti Development Bank, Himalayan Bank and many more have initiated their service from Zero Bazar, nearby Park's headquarters.

### Medical Services

There is good facility of medical services in the BaNP area. There are hospitals and clinics in Kohalpur and Nepalgunj and there are health posts in rural municipalities. Highway clinic and snake bite treatment center is in operation infront of the park headquarters. However, medical facility is poor in the BZ of Dang and Salyan due to remoteness.

## 8.1.3 Interpretation Facilities

Interpretation is the most powerful communication process for any visitor that is available to communicate its messages to visitors. In fact, it provides an "added value" to the total visit. Interpretation facilities provide the visitors information on natural and cultural landscapes, sites, features, objects, people,

events and stories of the area including potential tourism product for visitors to be engaged and do's and don'ts inside the Park and BZ area. The BaNP has no interpretation facilities and requires good interpretative plan for the long-term tourism success. BaNP has planned to establish one multipurpose Visitor Information Centre (VIC) at Obhari where there will be ticket counter, display centre providing information, video documentary showing hall, museum, souvenir shop, restaurant and rest rooms. In addition to this two VIC will be established in Kohalpur and Kusum to provide first- hand information of the Park. In the entire ticket counter, minimum information providing display boards will also be placed so that visitor will get basic information. Besides this, information on BaNP will also be provided in the VIC of NP and KrCA to promote conservation circuits. Similarly, display boards marketing tourism products of BaNP will be placed in Nepalgunj and Bhairahawa airport. In addition to the VIC, seven entry gates for visitors will also be constructed in Shiva khola, Kusum, Sikta, Dhakeri, Chisapani, Sutaiya and Khadkabar.

## 8.2 Tourism Management

### 8.2.1 Institutional Setup

BaNP will take lead role encouraging institutions like private investor or community organization to develop tourism to operate hotel for food and accommodation, tour guide operators, elephant safari operators, transport service to operate jeep drive, travel agents to operate bus from Nepalgunj to Obhari, community organization to perform culture show, banks and health service.

### 8.2.2 Impact Minimization

With the increase of tourism activities in and around BaNP, there will be increase in noise around the habitats, solid waste and possible damage to vegetation inside the park including negative influence on culture of BZ communities. BaNP will work with concerned institutions to ensure that any negative impacts of tourism are mitigated. The negative impacts in the Park and BZ can mainly be noise pollution that can drive wildlife from one place to another. Similarly, traffic congestion en route from Nepalgunj to Aghaiya and inside BaNP can also affect wildlife movement between Park and national forest. There may also be an impact on local traditions, culture, arts and crafts. Through various management and monitoring measures a site should manage and guide the development of tourism so that it has positive impacts on local livelihoods without deteriorating nature and culture.

### 8.2.3 Tourism Product Diversification

Tourism development at BaNP is ongoing as various tourism products have been identified and infrastructure construction is underway. BaNP will work closely with BNP and KrCA to diversify the tourism products in such a way that tourists visiting BNP and KrCA also visit BaNP. It will be done by providing information of BaNP in the VIC of BNP and KrCA. Similarly, tourism operators of BNP will also be encouraged to make some round-trip tourism activities.

### 8.2.4 Nature Interpretation

Through nature interpretation, we can pass on knowledge about nature and the relationships within it to promote in-depth understanding and insight, respect and consideration for natural and cultural environment of the park and BZ. Therefore, nature interpretation will be conducted through brochures, display boards, and various audio-visuals methods to communicate information and messages about wildlife and culture of the area.

**Issues**

- There are inadequate tourism infrastructures such as VIC, raised platform in Hattisar and watch tower
- Inadequate investment by private entities
- Facilities and Services regarding accommodation
- There are no interpretation facilities in the Park
- There are limited facilities and arrangements for visitors for jungle walk, elephant safari, jeep safari, Churia hiking

**Strategies**

- Develop tourism infrastructures in the Park around Agaiya, Dhakeri, Khadkabar, Gavar Valley, Balapur and Buchapur in collaboration with local bodies
- Promote private entrepreneurs by providing conducive environment to operate eco-friendly tourism packages, such as elephant safari, jeep safari, jungle walk, hiking, cultural activities and bird watching
- Diversify tourism products and market through national and international tourism operators, media, seminar, and other means
- Collaborate with BNP and KrCA to attract tourists for longer nature tourist circuits and routes

**Activities**

- Construct and operate seven entry gates for visitors in Shiva khola, Kusum, Sikta, Dhakeri, Chisapani, Sutaiya and Khadkabar
- Construct multipurpose VICs at Kohalpur and Obhari that includes ticket counter, display centre, museum, documentary showing hall, souvenir shop, refreshment centre, and rest room
- Place display boards with information on tourist destination areas and tourism products of BaNP in Bhairahawa and Nepalgunj Airport
- Place display boards in the VICs of BNP and KrCA to attract visitors in BaNP
- Construct, maintain and repair concrete or wooden watch towers at appropriate locations near grasslands and waterholes
- Erect hoarding boards informing Do's and Do nots in the Park and BZ for the visitors
- Place signage at appropriate location in the Park to show direction to the visitors
- Construct raised platforms to climb for elephant safari, at least, in two places
- Construct cultural house and museums in the BZ
- Support BZ community to operate community lodges and homestays in the tourist hubs of the BZ especially in Gavar valley, Balapur and Buchapur
- Place advertisement boards of elephant and jeep safari in the Park
- Prepare Video Spot to promote tourism in BaNP
- Advertise tourism products in the Park through Television, Radio and FM radio at national and local level
- Organize meetings and training to promote local entrepreneur and nature guide to operate jeep safari and other facilities in the Park

- Conduct nature guide trainings to local and interested individuals giving priority to indigenous and marginalized communities and youths
- Enhance capacity of nature guides in nature interpretation especially on wildlife, birds, plants through trainings and some experience sharing activities
- Conduct home-stay, house-keeping and cook trainings at Aghaiya, Dhakeri, Khadkabar, Gavar valley, Balapur and Bucchapur
- Organize cottage and small business development and management training
- Provide support to journalists to visit BaNP and publish article
- Publish news and article in newspaper
- Production of video documentary

# Special Programme

CHAPTER 9

## 9.1 Gharial conservation in Rapti River

Rapti River which is at the edge of the park boundary has the potential to sustain gharial. The river is one of the suitable habitats for the species. The river is undisturbed in terms of sand and stone excavation.

**Issues**

- Critically endangered species
- Less than 1 percent survival in nature

**Strategies**

- Introduce captive reared gharial in Rapti river
- Link river dependent communities with gharial conservation and livelihood opportunities
- Link river dependent communities with river based tourism activities

**Activities**

- Feasibility study for introduction of gharial in Rapti river
- Form group of river dependent community for gharial conservation
- Conduct awareness programme related to conservation of gharial
- Provide alternative livelihood opportunities for river dependent communities
- Release of captive reared gharial in Rapti river periodically on conservation days
- Periodic monitoring of gharial in the river

## 9.2 Extension of the Park

Banke National Park covers an area of 550 $km^2$ and surrounds 343 $km^2$ areas as buffer zone area of the Park. The park has small area to retain the mega fauna species all-round the year. Due to this the park is being regarded as extended habitat for the mega faunal species. However, the park has immense potential to accommodate such mega faunal species by extension the core and buffer zone of the park.

Extension of the park area is necessary for biodiversity conservation and to maintain its integrity. One such potential area for extension of the core area of the park is Khairee-Shivapuri-Rapti river upto Arjun stream. This extension will provide opportunity to increase the habitat of large area demanding wild elephants and tigers.

**Issues**

- Park size too small to hold mega faunal species such as tiger and elephant
- Increasing HWC

**Strategies**

- Continue dialogue with different socio-political institutions and local stakeholders to broaden the understanding of the park extension
- Initiate pilot program in the buffer zone to link them with conservation benefits
- Establish the baseline information for community livelihood and biodiversity conservation perspectives

**Activities**

- Conduct feasibility study report for the extension of the park
- Facilitate IEE for the extension of park area
- Follow the development of the proposal to study the details of the park extension to prepare the communities in favour of the park extension
- Carry out mass meeting through the local units, CBOs, media interaction about the importance of the park extension and biodiversity conservation
- Establish the buffer zone boundary in the extended area

## 9.3. Road Kill management

Annually number of wild animals was killed in road accident mainly within the portion of EastWest highway from Muguwa River to Agaiya. Mostly the Wild boar (*Sus scrofa*), Spotted deer (*Axis axis*), Porcupine (*Hystrix indica*), rhesus macaque (*Macaca mulata*) and Hare (*Lepus spp.*) were killed in road accidents. Sometimes the protected animals like Hyaena *(Hyaena hyaena*), Leopard cat (*Prionailurus bengalensis*) and FHA (*Tetraceros quadricornis*) were also killed. The deer and antelope were also been killed by dogs used for hunting purposes. The park authority realized that the animals use to cross the highway to go to Rapti River towards south for use of water (as the core zone north to highway is very dry) where they clash with the vehicles. The highway is in many location turns where the wild animals trying to cross is not visible from far thus even vehicle would find difficult to stop to save the wildlife even if seen in such bends. The number of road kills in BaNP in different fiscal year is shown in Figure 14.

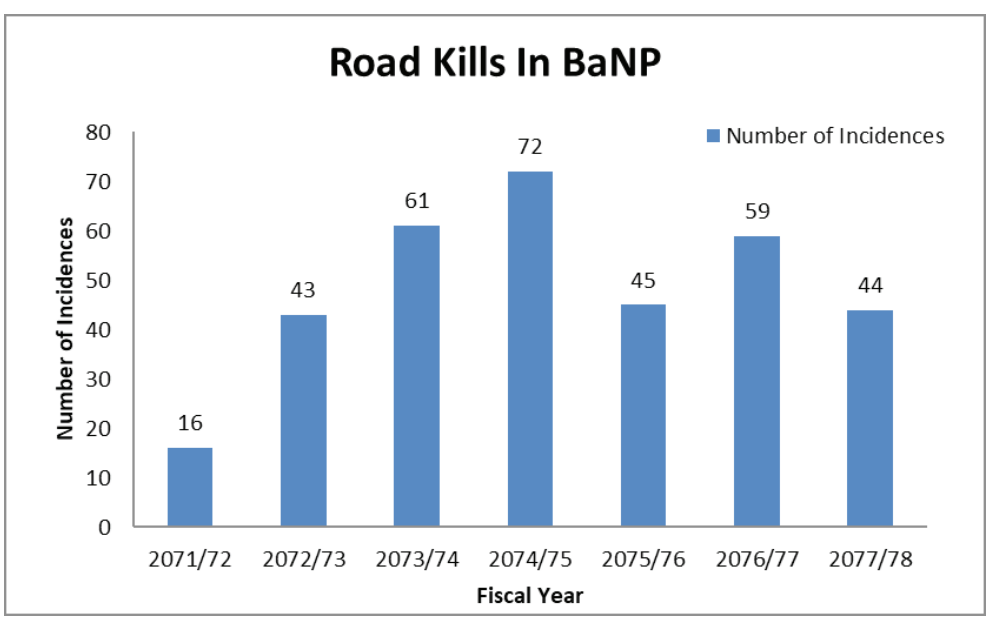



**Figure 14:** Number of road kills incidences in BaNP in different fiscal years

Road kill management requires working for infrastructures in the road areas. Such infrastructures are overpass, underpass, meshwire guided fencing and wildlife-zebra crossing. The design of these infrastructures should be of dimensions that support free passage to wildlife according to different categories of animal size. This should also follow the Wildlife Friendly Infrastructure Construction Guideline, 2078, Nepal. The strategic location of these infrastructure developments is given in Annex XIII.

**Issues**

- Dryness of core zone north to highway
- Long highway (102 km) passing through contiguous forest of park and divisional forest
- Specified speed limit (40 km/hr) not followed by drivers

**Strategies**

- Awareness raising to drivers and vehicle owners may reduce the road accidents
- Proper and strict monitoring and enforcement mechanism for vehicle movement
- Stringent application of legal measures to careless drivers and owner after the awareness and monitoring is equally important
- Regulated the movement of closed vehicle and prohibit the movement of small open vehicle including 2 wheelers by recommending alternative routes

**Activities**

- Construct 1 fly over bridge and 1 underpass at strategic locations, in coordination with Department of Road (DoR)
- Construct guided fence (Meshwire) along with wildlife zebra crossing at strategic locations
- Construct guided fence in strategic location in and around Sikta canal
- Create and restore waterholes in the northern part of the park
- Conduct awareness to drivers and vehicle owners while passing the park area
- Install the CCTV at different strategic locations of the highway
- Plantation of suitable species in the northern part of the park
- Erect hoarding boards and sign boards in accident prone areas
- Conduct research to find the scientific way to avail water all season in drier part of the park

## 9.4 Climate Change Adaptation

Climate change is a serious threat to Nepal. The impact of climate change has been observed in various sectors, such as water, forestry, biodiversity, agriculture, and cryosphere. Impact on these sectors is very likely to affect the livelihood of local communities. Adaptation is the process of adjustment to actual or expected climate change and its effects. Regardless of how quickly societies decarbonize, global temperatures are already more than 1 °C above the 1850-to-1900 baseline and will continue to rise through mid-century and very likely beyond. As suggested by IPCC (2013), climate-related changes, such as variability in temperature, precipitation, and extreme weather events, can affect the environment and a wide range of sectors, such as water, disaster risk reduction, agriculture, industry, as well as recreational activities. We must seize the opportunity for research to enhance its usefulness and usability in order to rapidly upscale adaptation action, now needed more than ever.

The Government of Nepal has recognized climate change adaptation as fundamental to safeguarding vulnerable communities, ecosystems, and relevant climate-sensitive sectors from the impacts of climate change. Nepal's National Adaptation Plan of Action (NAPA) predicts warmer winter temperatures and increased winter and monsoon precipitation in the country (MoE, 2010). Given these predicted trends yet high degree of uncertainty over timing of erratic rainfall and extended dry spells and their socio-ecological consequences, it is important to integrate un/expected impacts into PA management plans and strategies with a focus on BZ communities and their livelihoods. Considering the proximity of this Park and its BZ into two major rivers systems of Rapti and Babai while also being a region which is relatively dry as compared to western Tarai, this area is vulnerable to flooding and drought. Since the uncertainties associated with paths of climate change is highly unpredictable, the plans should be adaptive and include 'no-regrets' strategies that will have conservation benefits even if events associated with climate change do not occur as shown by the general trends.

**Issues**

- Inadequate knowledge and research on likely impact of climate change on species, ecosystems and human communities and their livelihood strategies
- The rising of temperature during the summer and extended dry spells causes drying up of wetlands
- Changes in precipitation patterns impacting agricultural practices and productivity in the buffer zones
- Flash flood waters becomes the key barrier for mobility in the core zone
- Water scarcity for wildlife in some part of core area during extended dry spells
- Increased risks of forest fires due to extended dry spells
- Disastrous effects on human lives, properties and livelihoods and wildlife population with flooding resulting from incessant rain

**Strategies**

- Enhance knowledge and understanding regarding climate change impacts on species, ecosystems and local communities in the Park through assessments;
- Maintain, conserve and secure connectivity to surrounding potential habitats
- Reduce climate vulnerabilities of local communities through community based disaster risk management
- Enhance the capacity of park staffs, security persons, and BZ communities to cope with the climate change impacts through capacity building, exposure and orientations
- Diversify and enhance local livelihoods and adaptive capacities of most vulnerable settlements
- Improve small-scale community managed infrastructures to enhance efficiency and connectivity

**Activities**

- Undertake vulnerability assessments and adaptation planning in coordination with local bodies
- Build capacity of local youths as local resource persons or as citizen scientists to use them during monitoring of vulnerable species, ecosystem and habitat
- Introduce new crops varieties as adaptation interventions
- Improve and introduce livestock breeds and strengthen veterinary services partnering with Government and private sectors while also training local cadres of village level livestock health workers

- Establish multipurpose community buildings to facilitate local community in the affected areas during flood disasters
- Establish and strengthen community based disaster management committees
- Provide tools and equipment for disaster risk preparation around the most vulnerable settlements
- Renovate/ restore wetlands remaining within park area
- Create large size dams in the churia and enhance ground water recharge
- Create artificial highlands/ mounds leading to safe areas for wild animals
- Periodic repair and maintenance of community infrastructures such as Jorhatte, Obhari and Sikta irrigation canal
- Reforest degraded, climate vulnerable areas with fast-growing but climate resilient possibly native tree and plant species to create buffer against floods,
- Construct embankment, spur or any soil conservation measure in various rivers and streams to protect park infrastructures, human settlements and wildlife habitats from flood specially around Park head quarter, Paruwa Khola, Rapti River, Duduwa Khola, Babai river banks, Jhijari, Jethinala and Gaukholi
- Form community-based disaster management committee and link them with climate change and adaptation related institutions to tackle climate-related effects

## 9.5 Solid Waste Management

Most of the solid waste generated in and around BaNP is composed of organic matter, paper, and minor reused waste that are mainly reused for cattle feeding and manure, while disposal of other non-degradable categories of collected waste (glass, metal, and plastic) is not properly managed. Particularly, burning in open dumps poses a great hazard to environmental, human, and animal health. Similarly, dump sites close to water courses contaminates polluting river.

The pollution problem is now no longer confined to solid waste. Water sources along the major trails are being contaminated from improper affluent discharge, human waste, and garbage dumping. Sewerage and toilet waste can be found piped into nearby streams and rivers. The BZ will actively participate in control of various forms of pollution and attempt to make the control system more sustainable by involving local people with support from other stakeholders and focus on reducing waste generation and proper disposal systems.

**Issues**

- Inadequate knowledge on proper disposal and recycling of the solid waste in local communities
- Inadequacy of coordinated effort to address the issue of garbage and pollution management in highway sides of BaNP
- Lack of guidelines for properly managing the garbage
- Travelers passing through park areas in long route buses carelessly throw plastic water bottles across road

**Strategies**

- Develop water, sanitation and hygiene guideline for local communities
- Mobilize eco-clubs to raise awareness about importance of solid waste management

- Work with local and provincial governments, communities, private sector, and conservation partners to implement sanitation programme
- Use high tech solid waste management techniques in collaboration with local government
- Promote recycle/reuse, reduce, remove, and reject approach to manage wastes in the Park

**Activities**

- Support to develop proper sanitation infrastructures including drainage, toilets, collection and recycling systems
- Construct a Demonstration center on garbage management in order to demonstrate proper techniques of garbage disposal and recycling techniques to stakeholders
- Prepare a common sanitation guideline to make them adopt minimum sanitation standards for hotel, lodge, homestay and restaurant in managing clean front yard, toilet with leak proof septic tanks and waste water soakage pits
- Construct hoarding boards along the high ways to educate the passengers
- Strong law enforcement for garbage disposal in highways
- Construct new cremation site

## 9.6 Livelihood Program for River Dependent Communities

BaNP is home to several indigenous communities which are river dependent such as Khuna, Sunaha and Kumal. They are unique ethnic communities of BaNP and are vulnerable to climate change due to their livelihood activities. These communities must be uplifted in terms of socio-economy so that climate change does not become disastrous to their livelihood sustenance.

**Issues**

- Vulnerable livelihood due to impact of climate change

**Strategies**

- Explore alternative livelihood options for the ethnic community

**Activities**

- Awareness and capacity building for the dependent communities
- Form river dependent household groups
- Construct community fish ponds for them
- Provide support for fish farming and marketing
- Provide skills for saving and credit scheme and capital mobilization through their cooperative
- Support and provide  training related to smart agriculture
- Provide alternative income generation activities

# Buffer Zone Management

10 CHAPTER

## 10.1 Introduction

Buffer zone is the social protection ring around core area. The main purpose of buffer zone is to develop local guardianship for wildlife conservation. Benefit sharing is the basis to ensure local people participation for the conservation. The 30 – 50 percent revenue of the park is allocated for conservation and community development works in the BZ.

The total area of BaNP BZ is 343 $km^2$. The BZ of the Park includes parts of Kohalpur municipality and two rural municipalities of Banke district Table 10. Similarly, the northern part of BZ occupies parts of two rural municipalities of Dang and one rural municipality of Salyan.

**Table 10: Municipalities in Buffer zone**

| S.N. | District | Municipality/Rural Municipality | Remarks |
|---|---|---|---|
| 1 | Banke | i) Baijanath Rural Municipality ( previous Naubasta and Chisapani VDCs), ii) Kohalpur Municipality ( previous Naubasta VDC and Kohalpur Municipality) and iii) Rapti Sonari Rural Municipality (previous Mahadevpuri, Khas-Kushma and Kachanapur VDCs) | 3 Local Government |
| 2 | Dang | i) Dangisharan Rural Municipality (previous Goltakuri VDC) and ii) Babai Rural Municipality (previous Panchakule and Purandhara VDCs) | 2 Local Government |
| 3 | Salyan | Kalimati Rura municipality (previous Kalimati Rampur, Kalimati Kalche, Kapre Chaur VDCs) | 1 Local Government |

There are 77 BZUGs, 9 BZUCs and a BZMC has been formed according to the Buffer Zone Management Rules, 2052 and Buffer Zone Management Guideline, 2056. There are nine buffer zone user committees in Banke National Park and BZ consisting of six from Banke, two from Dang and one from Salyan district. The user committees and the user groups will have their own work plans and financial resources channeled through buffer zone management committee to utilize in conservation, community development, income generation, and skill enhancement and conservation education program. The UC wise budget is presented in Annex 10.

## 10.2 Past and Present Management Practices

BZ comprises forest, agriculture land, settlement, village open spaces and any other land use. Forest in the BZ is very important as it is considered as corridor and connectivity areas between wildlife habitats. Further, the inhabitants surrounding such areas (the impact zone communities) have certain anticipated roles and responsibilities for conservation and management. It, therefore, implies for special policy and legal ground to support the management of these forests and livelihood improvement of surrounding communities. The present generalized community forestry and other participatory management systems are not enough to support in this dimension. It has been practically seen that the interventions are well

beyond the approved community forestry guidelines which are more focused on management of forests for the supply of forest products.

The forests in the BZ are handed over to the community as a BZCF after they submit application to CCO to manage the forest to cater their needs of forest product so that they do not need to enter into the Park. Local communities are provided technical support to prepare BZCF constitution and Operational Plan (OP) as per the guideline. After approval from the general assembly of CFUG, the CFUG plan with the recommendation letter send to park office for final approval. This will be in operation only when CCO signs on it and officially hand over to the community. The BZCFs coordinates with BZUCs to manage their forest.

There are 70 BZCFs in the Park managed by local community. These forests act as corridors for wildlife to move from BaNP to BNP and also to the PAs of India. Although, there are strict rules, the grazing pressure is very high in the forest and due to human disturbance; there is frequent forest fire in the windy dry season. BZCFs of Changainala, Sikta-Gabar and Sauri-Bairia sections are highly degraded due to human pressure.

The revenue generated by BaNP in fiscal year 2077/78 is Rs. 65,64,237. This is small amount as compared to revenue generated by Chitwan and Bardia National Park. BaNP showed positive growth during the early years of formation. These large sums of amount were contributed by timber auction which was produced from the BZ forest area transfereed for Sikta Irrigation Canal. The revenue generation has declined over the past year and this can be attributed to the pandemic in recent years. The trend of revenue generation by BaNP is shown in Figure 15.

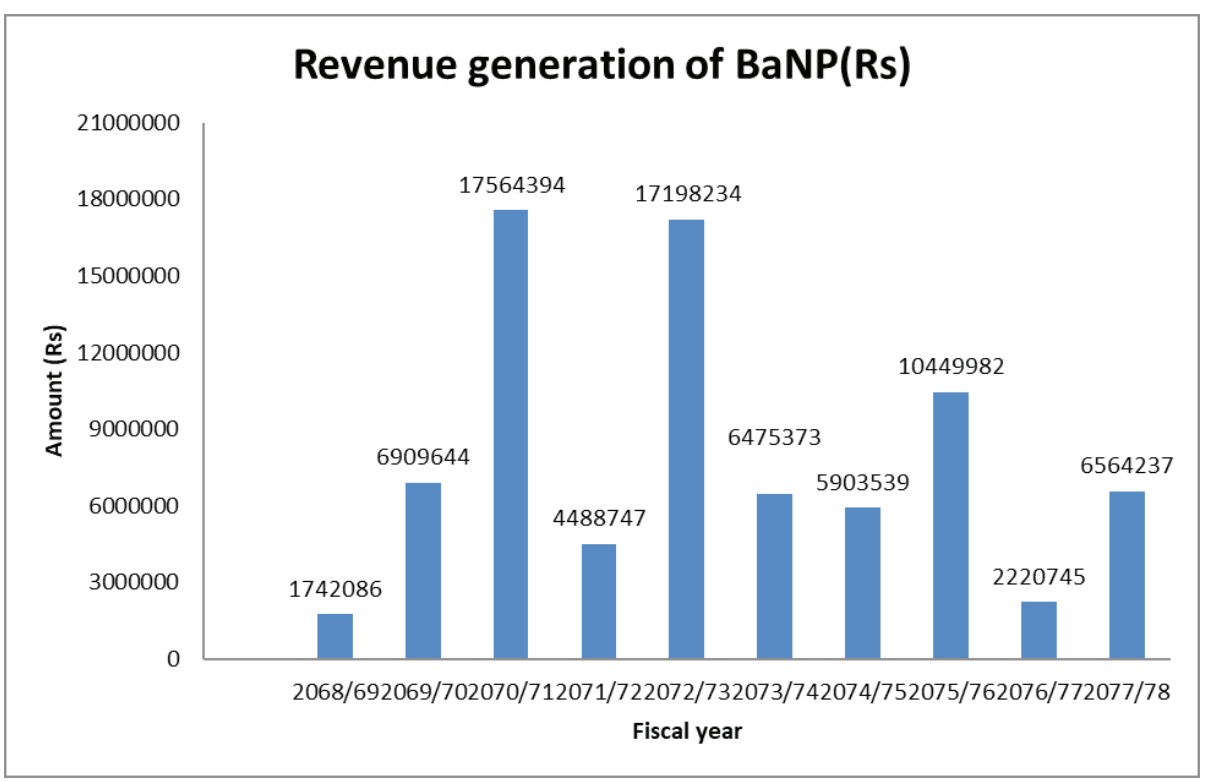



**Figure 15:** Revenue generation of BaNP in different fiscal years

## 10.3 Management Strategies

### 10.3.1 Zonation

For management purpose, BZ will be divided into conservation zone, sustainable use zone and intensive use zone.

**Conservation Zone**

The large forest patches in BZ is equally good as a good habitat for wildlife. Thus, these areas will be basically managed as extended wildlife habitat where extraction of forest products will be restricted but the area will be allowed for regulated tourism activities if needed.

**Sustainable Use Zone**

The forested area in BZ which is managed by community for dual purpose of meeting the need of forest products for the providing refuge for dispersing population of wildlife falls under this category of zonation.

**Intensive Use Zone**

This is the area in the BZ, including all the settlements and private lands, where environment-friendly development activities will be carried out to enhance the livelihood of the people living in the area through various developmental inputs.

### 10.3.2 Community Development

Community development programs will be focused to improve traditional livelihood so that their dependency on park resource will be diminished in the long run. To reduce rural poverty, social development will be focused in BZ with special focus to small infrastructure. For this, need-based and site-specific intervention will be undertaken garnering support of local communities. Site specific plans for school support, road construction, drinking water facility, support of small irrigation, culvert, bridge repair and construction, canal construction and toilet construction will be the guiding document for implementing developmental initiatives in the respective BZUCs and BZUGs. Also, there is need for construction of building in each UC. The traditional use right of way, canal going through park and cultural sites are given in Annex XII.

### 10.3.3 Biodiversity Conservation

One of the major objectives to bring the concept of BZ management is to develop partnership between the Park and the people in biodiversity conservation. The involvement and active participation of local people is the main thrust of biodiversity conservation in the BZ.

In the new age and developmental phase, local, national, and international organizations carry out a variety of development initiatives. A number of development projects may alter the forest land use system. Because BZ serves as a refuge, a migration corridor for megafaunal species, and a shock absorber for various animal conflict activities, such development projects that affect the land use of BZ forests will not be approved. It is of utmost importance to keep the forests of BZ intact; however sustainable use of forest products will also be encouraged.

### 10.3.4 Ecotourism Promotion

Elephant safari, Jeep safari, rafting, camping and trekking will serve the ecotourism promotion of the park. The potential sites for trekking, rafting, elephant safari, jeep safari, home stay development and camping are given in Table 11. The whole ecotourism promotion is dealt separately in Chapter 8.

**Table 11: Potential tourism sites in BaNP**

| SN | Potential Tourism Sites | | |
|---|---|---|---|
| **A** | **Trekking** | **C** | **Rafting** |
| 1 | Khadgawar, Gharikhare, Ambasa, Ryang | 1 | Shivakhola to Bairiya (Rapti) |
| 2 | Muguwa, Amilabari, Kyureni | 2 | Bairiya to Gabhar ( Rapti) |
| 3 | Muguwa, Amilabari, Hattidamar | 3 | Gabhar to Agaiya (Rapti) |
| 4 | Deurali to Thati Chure trail | 4 | Ghuiyabari to Chepan (Babai) |
| **B** | **Homestay** | **D** | **Elephant safari** |
| 1 | Gabhar | 1 | Khadgawar |
| 2 | Khadgawar | 2 | Buchhapur |
| 3 | Balapur | **E** | **Jeep safari** |
| 4 | Ryang | 1 | Zone A (Buchhapur to Obhari) |
| 5 | Ghuiyabari | 2 | Zone A (Gabhar to Buchhapur via Khadgawar) |
| 6 | Hattidamar | 3 | Zone C (Obhari to Pani muhan) |
| **F** | **Camp site** | | |
| 1 | Panimuhan | | |

The potential trekking route in BaNP identified is 4 sites as shown in Figure 16.

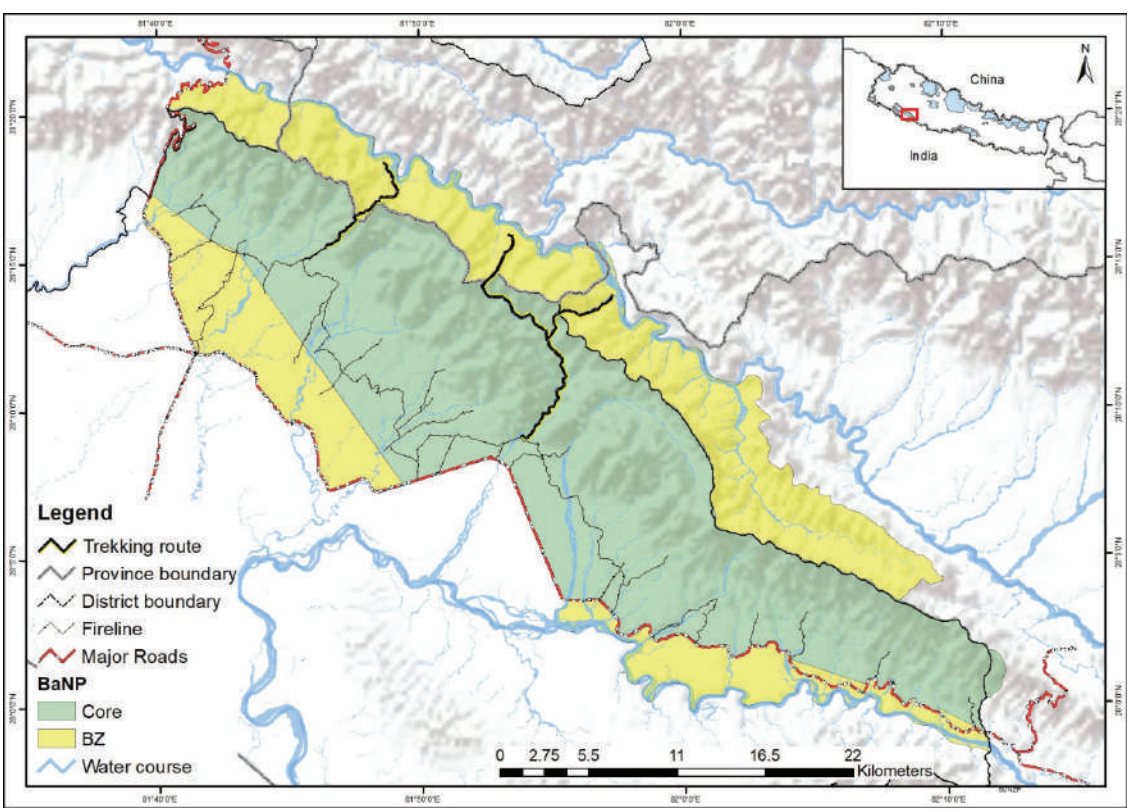



**Figure 16:** Potential trekking routes in BaNP

### 10.3.5 Functional Coordination

Buffer zone programs have not been reached to user group's level to align them for conservation. To date, the annual revenue of the park is not sufficient to address whole BZUGs. Coordination with local

units i.e. municipality and rural municipality, I/NGOs are very crucial to synergize the resources for the overall development of buffer zone.

### 10.3.6 Capacity Building

Capacity building programs will be planned for BZUCs and BZMC for their role of biodiversity conservation and coordination with various stakeholders of the buffer zone. The staff will be trained for facilitation skill and participatory approaches to deal with buffer zone community. Package (training, workshop, lecture, exposure visit) of capacity building programmes need to be developed to change employee' perceptions about buffer zone and improve their professionalism in Tarai-people cooperation and participatory management.

### 10.3.7 Conflict Minimization

The extension of HWC mitigation measures particularly mesh wire fence, power fence and their maintenance are priority strategy to save the life and property of the villagers. Importance to reduce the grazing pressure for conflict minimization will be internalized in the buffer zone community. Alternative crops that are not preferred by wildlife will be piloted. The amount of immediate relief fund established in all BZUCs need to be increased to provide the first hand quick relief for affected family or individuals. The release of compensation amount according to wildlife victim's compensation Guideline, 2069 (Third amendment, 2074) need to be channelized through local units to shorten the procedure and enhance their ownership for wildlife conservation.

### 10.3.8 Income Generation

Income generation and skill development activities have been identified as one of the important component of BZ program to reduce poverty and improve the economic condition of local people. The income generation and skill development activities will be carried out targeting poor, women, socially excluded and marginalized communities. Income generation activities will mainly focus in diversifying agriculture and livestock programme including fisheries, poultry, piggery and enhancing skills of local communities in these areas. Similarly, skill-based job which has market in the rural areas will be identified to provide training to local people so that they can have self-employment.

### 10.3.9 Conservation Education

The value of wildlife and unique ecosystem of the park will be imparted to different segment of buffer zone. Eco clubs will be formed in the school and conservation education programmes will be conducted through the clubs. Days will be celebrated in participation of community people and stakeholders. CBOs will also be mobilized for the extension of conservation education and conduction of awareness raising program.

### 10.3.10 Regulation of Forest Products

The management and conservation of BZ forest resources is a matter of great concern. The demand of the forest resources right from the fuel wood and timber is realized to be the major challenge in managing forest resources. The use of forest product is carried out as per the operational plan of community forest. In the absence of community forest, the BZUC will play bridging role with posts to provide forest product from BZ forest.

**Management of Sand, Gravel and Boulder**

Sand, gravel and boulders are one of the major sources for the construction of roads, buildings and other purposes, which play a vital role in the socio-economic and infrastructural development of the community as well as the nation. The excavation and use of sand, gravel and boulder in BZ is limited to its users in regulated way for their own purpose other than commercial. For the extraction other than local consumption, a separate IEE has to be undertaken. Regulated excavation of such products from rivers is allowed to the BZ communities only after charging royalty. These excavation activities are prohibited in areas where it could affect habitat, breeding and mobility of the aquatic life. Besides this, the excavation is limited to certain months and allowed only in designated river sections. Excavation should be in small scale more closely to the existing annual quantity of permission (supply). The standards enshrined in the Environmental Protection Act, 2076, and Environment Protection Regulation, 2077, should be adhered to while executing the excavation related activities. Regular monitoring, supervision and relevant studies are necessary to take right decisions in this matter. In any case, transportation and use of sand, gravel and boulder should not be extended outside the BZ. The use of mechanized equipment could be made available subject to the Park's permission.

Altogether, 34 streams/rivers were studied in detail for quantification of the total volume of river materials. The total length of the stream section falls within the BZ has taken into account for the estimation of the river based material. The width of the streams including banks has been divided into 3 parts and one-third mid zone of the streams. The depth of the sand, stone, gravel deposition has been randomly measured with measuring in various sub-sections of the streams. The total volumes of river materials (sand, gravel and boulder) in these streams/rivers were estimated to be 4631326 $m^3$. Of this estimated volume, 2315663 $m^3$ (50% of the total volume) is the allowable extraction volume. The total quantity and allowable volume extraction of river materials that can be collected from each of the streams/rivers of BaNP is given in Annex 11. The annual allowable volume extraction of river materials for 5 years period is given in Table 12.

**Table 12: Annual allowable volume extraction for 5 years period**

*(Quantity increased by 5% every year)*

| Total volume ($m^3$) | Allowable volume ($m^3$) | Year I | Year II | Year III | Year IV | Year V |
|---|---|---|---|---|---|---|
| 4631326 | 2315663 | 2315663 | 2431446 | 2553018 | 2680669 | 2814703 |

## 10.4 Implementation and Mainstreaming strategy

For the effective implementation of the plan, all the programmes will be implemented through user committees. The basic implementation strategy will be

- Ensure participation of all stakeholders
- Follow the good governance practices-maintain transparency and well-informed decision
- Promote green development in buffer zone through organic farming, use of biogas, roadside plantation and other green technology that reduces carbon footprint
- Capacity building for institutional sustainability

The mainstreaming strategies in buffer zone will include protection of wildlife, maintaining of wildlife habitats, regular monitoring of wildlife species, regulation of forest product collection and cattle grazing, conflict minimization and paying compensation for any damage by wildlife. Tourism sector would include facilitating eco-tourism activities with active participation of villagers, constitution of a development fund for improving tourism infrastructure and inspiring tour operators/lodge owners for their contributions.

# Activity, Budget and Logical Framework

11 CHAPTER

## 11.1 Activity and Budget

A total of Rs. 84,47,30,321 has been proposed for the period of this management plan excluding the administrative cost of the park. Of the total, Rs 58,70,54,573(69.50%) has been proposed for the core activities and Rs. 25,76,75,748 (30.50%) has been proposed for the BZ management as shown in Table 13. The administrative cost of the park for 5 years period has been proposed as Rs. 62,79,09,535 thereby summing the cost of five year management plan to Rs. 1,47,26,39,856. For the administrative cost, bench mark cost was taken from the cost incurred in fiscal year 2077/78 i.e. Rs 8,50,00,000 and the cost was increased by 10 percent every year. The budget estimation for the core activities is provided in Annex 8. The summary budget of each BZUC and planned budget for BZ activites is provided in Annex 9 and 10, respectively.

**Table 13: Estimated Budget for the implementation of the plan activities**

| SN | Activity | Total Amount in Rs. | Proportion (%) |
|---|---|---|---|
| **1** | Park Protection | 248250881 | 29.39 |
| **2** | Habitat management | | |
| | · Forests | 40060827 | |
| | · Grasslands | 30180719 | |
| | · Wetlands | 55203749 | |
| | Total | 125445295 | 14.86 |
| **3** | Fire management | 27415341 | 3.25 |
| **4** | Wildlife health management | 20143447 | 2.38 |
| **5** | Encroachment management | 16769204 | 1.99 |
| **6** | Research, Monitoring and Capacity Building | | |
| | Research | | |
| | · Species conservation | 10915379 | |
| | · Habitat management | 2700000 | |
| | · Tourism | 500000 | |
| | · Climate change and livelihood | 3700000 | |
| | Total | 17815379 | 2.11 |
| | · Monitoring | | |
| | · Species monitoring | 6125631 | |
| | · Habitat monitoring | 1605126 | |
| | · Wildlife health monitoring | 828845 | |
| | · Tourism monitoring | 2210253 | |
| | Total | 10769855 | 1.27 |

| SN | Activity | Total Amount in Rs. | Proportion (%) |
|---|---|---|---|
| | Capacity Building | 13914078 | 1.65 |
| | Total | 42499312 | 5.03 |
| **7** | Species Conservation Special Program | | |
| | · Tiger | 16090360 | |
| | · Four Horned Antelope | 3486534 | |
| | · Elephant | 24865341 | |
| | Total | 44442234 | 5.26 |
| **8** | Ecotourism | 32430093 | 3.84 |
| **9** | Special Program | | |
| | · Introduction of gharial in rapti river | 2917151 | |
| | · Extension of the park | 3710253 | |
| | · Road kill management | 4287816 | |
| | · Climate change adaptation | 14049576 | |
| | · Solid waste management | 2500000 | |
| | · Livelihood program for river dependent communities | 2193971 | |
| | Total | 29658766 | 3.51 |
| **10** | Buffer zone management | 257675748 | 30.50 |
| **Total** | | **844730321** | **100** |
| **Administrative cost of the Park** | | **62,79,09,535** | |
| **Total** | | **1,47,26,39,856** | |

The year wise breakdown of budget for plan activities of BZ is shown in Table 14.

**Table 14: Year wise budget breakdown of BZUC**

| SN | Name of BZUC | Year I | Year II | Year III | Year IV | Year V | Total |
|---|---|---|---|---|---|---|---|
| 1 | Kohalpur | 6449000 | 6336450 | 7134870 | 5913413 | 6263328 | 32097061 |
| 2 | Purandhara | 4089000 | 4150700 | 6667622 | 4497413 | 5599460 | 25004195 |
| 3 | Phurke Salli Malai Jaljala | 4504000 | 4685700 | 5114785 | 7229259 | 6197391 | 27731135 |
| 4 | Hattidamar Ghuiyabari | 15042000 | 15172850 | 18917277 | 17640085 | 18060179 | 84832391 |
| 5 | Rajkot | 5209000 | 4233450 | 6822622 | 5258247 | 5066015 | 27039333 |
| 6 | Rapti | 5459000 | 5180950 | 5097445 | 6475758 | 6983532 | 29196685 |
| 7 | Deurali Haryali | 6449000 | 6876450 | 5272273 | 4150531 | 4401777 | 27150032 |
| 8 | Dhakeri | 8074125 | 6896831 | 7046722 | 7056881 | 6371147 | 35445705 |
| 9 | Madhyabindu | 4989000 | 4284950 | 6456685 | 4903651 | 6373176 | 27965962 |
| **Total** | | 52276125 | 46808181 | 53943943 | 51650565 | 51788433 | 257675747 |
| **Percentage** | | **20.29** | **18.17** | **20.93** | **20.04** | **20.10** | **100** |

### 11.1.1 Source of Financing

The total proposed buget for the plan period is Rs. 1,47,26,39,856 including the administrative cost of the park. The Governement regular budget for the park will cover 78.25% of the total estimated amount Rs. 15,60,00,000 based on FY 077/78 budget with 10% increament in each subsequent year. The gap of about 21.75% is expected to be contributed by Provinces, conservation partners, other non-governemnt agencies and local bodies. The expected financing for the management plan is shown in Table 15.

**Table 15: Expected financing for the management plan**

| SN | Source of Budget | Park | BZ | Total | Grand total in 5 years (10% increment each year) |
|---|---|---|---|---|---|
| 1 | Government Budget | 120000000 | 360000000 | 156000000 | 1152398676 (78.25%) |
| 2 | Gap | Support of conservation partners, I/ NGOs, local bodies and Province | | | 320241180 (21.75%) |
| **Total** | | | | | **1,47,26,39,856** |

## 11.2 Logical Framework

The logical framework is given in Table 16.

**Table 16: Logical Framework**

| Narrative Summary | Objectively Verifiable Indicators (OVI) | Means of Verification | Assumptions |
|---|---|---|---|
| **Vision** | | | |
| Enhance ecological integrity of the park for the wellbeing of people | | | |
| **Goal** | | | |
| Conserve wildlife and contribute the livelihood and ecosystem services to local local communities | • Increased number of mega fauna species such as tiger and other important wild animals<br>• Improved forest cover, grassland, and diversity of plant species<br>• Improvement of social status and livelihood of the people<br>• Enhance ecosystem services reduce environmental calamities | • Survey report of mega fauna species and other important wild animals<br>• Annual and/or progress report of authorized national and international organizations<br>• Human Development Index reports<br>• Research papers and publications | • Government emphasis and favorable policy<br>• No occurrence of natural and human induced disasters |

| Narrative Summary | Objectively Verifiable Indicators (OVI) | Means of Verification | Assumptions |
|---|---|---|---|
| **Objectives** | | | |
| To protect and conserve biological diversity of the park with special focus on nationally protected and globally threatened wildlife species | • Increased population of tiger and four horned antelope along with other wild flora and fauna<br>• Reduced number of illegal cases by the end of 5 years<br>• Sightings of endangered species become more frequent | • Annual and/or progress report of authorized national and international organizations<br>• Wildlife census report<br>• Study reports and research papers<br>• Articles in the newspaper | • Adequate budget provided to implement activities<br>• Sustainable anti-poaching and strengthened security situation |
| To manage wildlife habitat to maintain ecological functions and processes of Terai and Churia region | • Improved habitat for wildlife<br>• Increased forest cover for wildlife<br>• Increased grassland cover<br>• Invasive species control<br>• Regulated river excavation and pollution<br>• Increased waterholes having year round water<br>• Increased waterflow and reduce flash flood in river tributaries | • Annual and/or progress report of authorized national and international organizations<br>• Wildlife census report<br>• Study reports and research papers<br>• Articles in the newspaper | • Regulated river excavation and pollution<br>• Developed intervention in controlling invasive species |
| To improve community livelihood through nature based tourism promotion | • Increased number of visitors and their satisfaction<br>• Increased employment opportunities<br>• Development of new site for ecotourism<br>• Enhanced conservation friendly livelihood opportunities | • Tourist flow records and reports<br>• Economic survey reports<br>• Media reports | • Enabling policy for nature based tourism |
| To strengthen institutional capacity to carry out management activities through research, capacity building, community participation and cooperation among stakeholders | • Database and documentation maintained<br>• Park office service delivery improved<br>• Increased participation of community and stake holders<br>• Increased collaborative efforts | • Annual and/or progress report of authorized national and international organizations<br>• HRD reports<br>• Media reports<br>• DNPWC reports, records of relevant stakeholders | • Human resource of all rank and positions is fulfilled<br>• Staff motivation is continued |

| Narrative Summary | Objectively Verifiable Indicators (OVI) | Means of Verification | Assumptions |
|---|---|---|---|
| **Outcome 1** | | | |
| • Maintained viable population of tigers in BaNP<br>• Maintained population of important faunal species such as wild elephants, FHA and gharial<br>• Decline of poaching and illegal trade of wildlife<br>• Enhanced human wildlife co-existence | • Number of tigers harbored at BaNP<br>• Number of important faunal species such as wild elephants, FHA and gharial harbored at BaNP<br>• Decreasing trend of poaching and illegal trade of wildlife<br>• Cases of HWC relief amount disbursed | • Annual and/or progress report of authorized national and international organizations<br>• Updated report of wild flora and fauna<br>• Tiger survey report<br>• Research study and publications | No occurrence of natural calamities and human induced disasters<br>No fragmentation due to linear infrastructure |
| **Outcome 2** | | | |
| • Improvement of habitat required for tiger and its prey | • Area of grassland increased<br>• Wetlands restored and created water holes<br>• Invasive species controlled in grassland and wetlands | • Annual and/or progress report of authorized national and international organizations<br>• BaNP habitat monitoring report<br>• Research study and publications | |
| **Outcome 3** | | | |
| • Establishment of visitor information center (VIC) in all sectors<br>• Increased number of tourism based private entrepreneurs<br>• Operation of cultural events and establishment of cultural museum<br>• Satisfaction of visitors through services and facilities received<br>• Increased coverage of BaNP in media | • Number of VIC established<br>• Number of increased tourism based private entrepreneurs<br>• Number of cultural events organized<br>• Number of tourist expressing satisfaction in visiting BaNP<br>• Number of news, article, interview and video documentary published, aired and broadcasted in different sources of media | • Annual and/or progress report of authorized national and international organizations<br>• Number of tourism services operated<br>• Clippings of news articles<br>• Establishment of cultural museum<br>• Nepal tourism board reports | Political stability is maintained and improved<br>No pandemic like COVID-19 is occurred |

| Narrative Summary | Objectively Verifiable Indicators (OVI) | Means of Verification | Assumptions |
|---|---|---|---|
| **Outcome 4** | | | |
| • BaNP staffs and BZUC committee members are trained in both technical and management aspect<br>• Law enforcement is smooth without any conflict<br>• Increased involvement of conservation partners in capacity building and technology transfer<br>• Enhanced participation of community in conservation activities | • Number of BaNP staffs and Conservation Committee members benefitted<br>• Number of reduced conflict between BaNP and community members while law enforcement<br>• Resources pooled in conservation<br>• Number of local people involved in conservation activities | • Progress reports<br>• Training reports<br>• Records of conflict between BaNP staffs and community members | • System is in place for staff mobilization |
| **Activities** | | | |
| 1. **To protect and conserve biological diversity of the park with special focus on nationally protected and globally threatened wildlife species**<br>1.1 Construct and upgrade posts, view towers, roads and firelines<br>1.2 Construct different physical infrastructure (buildings for staff, shed house, grain store house, water storage facility etc) to support Hattisar management<br>1.3 Launch patrolling i.e. SRP/MRP/LRP, sweep operation, smart, river/boat patrolling, camping, elephant based patrolling, informant mobilization)<br>1.4 Strengthen intelligence network and information system to control poaching and other illegal wildlife related activities<br>1.5 Conduct regular status assessment of important wildlife species such as tiger, wild elephant, FHA, gharial etc.<br>1.6 Update and prepare new checklist of flora and fauna<br>1.7 Establish wildlife rescue and orphanage center, one at each sector offices<br>1.8 Capacity building of park staffs and security units<br>1.9 Strengthen coordination and collaboration with national and international conservation partners<br>**1.10** Continue awareness programmes to youth, community and stakeholders | | | |
| 1. **To manage wildlife habitat to maintain ecological functions and processes of Terai and Churia region**<br>1.1 Apply mechanical/ manual methods to uproot and burn invasive species periodically<br>1.2 Maintain fire line network for easy accessibility for fire fighting<br>1.3 Use RS and GIS tools and techniques to map fire prone areas spatially and temporally<br>1.4 Install forest fire early warning systems<br>1.5 Construct new grassland area to increase at the suitable sites<br>1.6 Mapping of all the grasslands in both the Park and BZ and carry-out periodic monitoring to support management and decision-making | | | |

| Narrative Summary | Objectively Verifiable Indicators (OVI) | Means of Verification | Assumptions |
|---|---|---|---|
| 1.7 Identification of key grassland and start management based on scientific studies<br>1.8 Identification and management of key waterholes<br>1.9 Conduct mapping of wetlands and plan their interventions<br>1.10 Initiate baseline studies on climate change impacts on habitat<br>1.11 Water quality assessment and water recharge<br>1.12 Maintain spring water source available in the park | | | |
| 1. **To improve community livelihood through nature based tourism promotion**<br>1.1 Construct multipurpose VICs at Kohalpur and Obhari that includes ticket counter, display centre, museum, documentary showing hall, souvenir shop, refreshment centre, and rest room<br>1.2 Construct and operate seven entry gates for visitors in Shiva khola, Kusum, Sikta, Dhakeri, Chisapani, Sutaiya and Khadkabar<br>1.3 Undertake study of elephant safari route and provide elephant safari service to the visitors<br>1.4 Enhance capacity of nature guides in nature interpretation especially on wildlife, birds, plants through trainings and some experience sharing activities<br>1.5 Access and improve infrastructure facilities for nature based tourism (forest trail, roads)<br>1.6 Identification of potential tourism sites (home stay, hotel, cultural museum)<br>1.7 Regulate camping, hiking, elephant safari and jeep safari<br>1.8 Conserve and promote local culture and cultural heritage<br>1.9 Sanitation and solid waste management<br>**3.10** Advertise tourism products in the Park through Television, Radio and FM radio at national and local level | | | |
| 1. **To strengthen institutional capacity to carry out management activities through research, capacity building, community participation and cooperation among stakeholders**<br>1.1 Census of important wildlife species such as tiger, wild elephants, FHA, gharial etc<br>1.2 Monitoring of key wildlife species<br>1.3 Research on status of wildlife, habitat management, wildlife health, climate change, human wildlife conflict etc<br>1.4 Feasibility study of introduction of gharial, gaur and dolphin<br>1.5 Capacity enhancement training such as GPS and GIS, wildlife handling trainings,<br>1.6 Coordination and collaboration at local and national level<br>1.7 Conduct Trans-boundary meeting regularly | | | |

## 11.3 Gender Equity and Social Inclusion

Gender inequality and social exclusion are issues of global concern. Over the last decade, Asia and the Pacific region has made a remarkable progress on these issues (MoUD 2013). Nepal is not an exception to this regard. Since last decade, it has been moving ahead by fulfilling all commitments made in the international arena towards non-discrimination, gender equality and social justice. In this regard, BaNP needs to better target the delivery of development to the hardest to reach segments of society, those who have been excluded from development and those who have been overlooked.

BaNP will adopt strategy as a core cross-cutting theme. The implementation strategy will be participatory and inclusive as possible. At the program level the focus will be laid to identify whether the program is GESI responsive, embraces inclusive approaches in program appraisal, design, implementation, monitoring and evaluation. In terms of organizational preparedness, building conceptual clarity and operational skills for issues is a common concern for all partners. The management plan will mainstream strategy to engage and empower women and marginalized people in equitable benefit sharing through meaningful participation in participatory biodiversity conservation activities.

# References


Baskaran N., Kannan V., Thiyagesan K. & Desai A.A. (2011). Behavioural ecology of four-horned antelope (*Tetracerus quadricornis* De Blainville, 1816) in the tropical forests of southern India. *Mamm. Biol.,* 76: 741–747.

Blanford, W. T. (1888). The fauna of British India, including Ceylon and Burma: Mammalia. Taylor and Francis, London, United Kingdom.

DNPWC (1996). Buffer Zone Management Regulation, 2052, DNPWC, Kathmandu.

DNPWC (1999). Buffer Zone Management Guidelines, 2056, DNPWC, Kathmandu.

CITES (2022). Appendices I, II and III, Convention on International Trade in Endangered Species of wild Flora and Fauna.

Dahal, B.V. and Kandel, D. (2013). Habitat Survey of Four Horned Antelope at Banke National Park, Nepal.

DNPWC and DFSC (2018). Status of Tigers and Prey in Nepal. Department of National Parks and Wildlife Conservation & Department of Forests and Soil Conservation. Ministry of Forests and Environment, Kathmandu, Nepal.

DNPWC (2008). The Elephant Conservation Action Plan for Nepal. Ministry of Forest and Soil Conservation. Department of National Parks and Wildlife Conservation, Kathmandu, Nepal.

DNPWC (2012). Annual Report (July 2011–July 2012). Nepal: Department of National Parks and Wildlife Conservation.

Rahmani, A. (2001). Antelopes: Global survey and regional action plans. Part 4: North Africa, the Middle East, and Asia. Gland, Switzerland and Cambridge: SSC Antelope Specialist Group, IUCN.

Hoare, R.E., & Du Toit, J.T. (1999). Coexistence between people and elephants in African savannas. *Conserv Biol.,* 13, 633–639.

IUCN (2018). The IUCN redlist of threatened species. Retrieved from http://www. iucnredlist. org/initiatives/mammals

Jathanna, D., Karanth, K.U., Kumar, N.S., Goswami, V.R., Vasudev, D., & Karanth, K.K. (2015). Reliable monitoring of elephant populations in the forests of India: analytical and practical considerations. *Biol Conserv*., 187, 212–220.

Khadka, A. (2019). KoshiTappu reserve to shift elephant stables. Retrieved from https://myrepublica.nagariknetwork.com/news/koshi-tappu-reserve-to-shift-elephantstables/

Krishna Y.C., Clyne P.J., Krishnaswamy J. & Kumar N.S. (2009). Distribution and ecology review of the four homed antelope, *Tetracerus quadricornis*. *Mammalia*, 73: 1–6.

Mandal, C.K. (2019). Elephants are still dying at an alarming rate in Nepal Retrieved from https://kathmandupost.com/climate- environment/2019/08/12/elephants-arestill-dying-at-an-alarming-rate-in-nepal

MoE (2010). Climate Change Vulnerability Mapping for Nepal. Government of Nepal, Ministry of Environment, Kathmandu, Nepal.

Nowak, R. M. (1991). Walker's mammals of the world. 5th ed. Vol. II.Johns Hopkins University Press, Baltimore, Maryland.

NTNC (2020). Asian Elephants. National Trust for Nature Conservation, Kathmandu, Nepal.. Retrieved from https://ntnc.org.np/thematic-area/asian-elephant

Pokharel, K. & Storch, I. (2012). Factors influencing the spatial distribution patterns of the Four-horned Antelope in lowland Nepal. *Gnusletter*, 30(2): 13–14.

Pradhan, N. M. B., Williams, A. C., & Dhakal, M. (2011). Current status of Asian Elephants in Nepal. *Gajah*, 35, 87– 92.

Ross, S. and Wall, G. (1999): Evaluating Ecotourism: The Case of North Sulawesi, Indonesia, Tourism Management: Research, Policies, and Practice, Vol. 20, No. 6, pp: 673-682.

Sharma, K., and Rahmani, A.R. (2004). Four-horned antelope or chowsingha (Tetracerus quadricornis Blainville, 1816). ENVISBulletin (Wildlife and Protected Areas): ungulates of India.

Sharma, K., Rahmani, A.R. & Chundawat, R.S. (2005). Ecology and distribution of four-horned antelope Tetracerus quadricornis in India. Final report-DST, Bombay Natural History Society, Mumbai, India: 70.

Sharma, K., Rahmani, A.R. & Chundawat, R.S. (2009). Natural history observation of the four-horned antelope *Tetracerus quadricornis*. *J. Bombay Nat. Hist. Soc*. 106: 72–82.

Sukumar, R. (1991). The management of large mammals in relation to male strategies and conflict with people. *Biol Conserv*., 55, 93-102.

Sukumar, R. (2006). A brief review of the status, distribution and biology of wild Asian elephants Elephas maximus. *Int Zoo Year*, 40, 1-8.

Thapa, G.J., E., Wickramanayake, S.R., Jnawali, J. O. and Adhikari, R. (2016). Assessing climate change impacts on forest ecosystems for landscape scale spatial planning in Nepal. *Current Science,* 110: 345–352. doi:10.18520/cs/v110/i3/345- 352.

# Annexes

# Annex-I

## Flora of Banke National Park

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 1 | Acanthaceae | *Andrographis paniculata* | | | | |
| 2 | Acanthaceae | *Barleria cristata* | Bhende kuro | Herb | | |
| 3 | Acanthaceae | *Barleria prionites* | Kuro | Herb | | |
| 4 | Acanthaceae | *Eranthemum purpurascens* | | Shrub | | |
| 5 | Acanthaceae | *Gomphrena sp.* | Jogikath | Tree | | |
| 6 | Acanthaceae | *Hygrophila auriculata* | Tal Makhana | Herb | | |
| 7 | Acanthaceae | *Justicia adhatoda* | Asuro | Shrub | | |
| 8 | Acanthaceae | *Justicia diffusa* | Phulphar | Herb | | |
| 9 | Acanthaceae | *Phlogacanthus thyrsiformis* | Chuwa | Shrub | | |
| 10 | Acanthaceae | *Ruellia beddomei* | | Herb | | |
| 11 | Acanthaceae | *Rungia pectinata* | Ukuche Jhar | Herb | | |
| 12 | Amaranthaceae | *Achyranthes aspera* | Apamarg/ Datuwan | Herb | | |
| 13 | Amaranthaceae | *Alternanthera sessilis* | Bhiringi jhar | Herb | | |
| 14 | Amaranthaceae | *Amaranthus spinosus* | Ban lunde/ Kande latte | Herb | | |
| 15 | Amaranthaceae | *Amaranthus viridis* | Latte saag | Herb | | |
| 16 | Amaranthaceae | *Digera muricata* | | Herb | | |
| 17 | Amaryllidaceae | *Curculigo orchioides* | Musli kanda | Herb | | |
| 18 | Anacardiaceae | *Buchanania latifolia* | Pyari | Tree | | |
| 19 | Anacardiaceae | *Lannea coromandelica* | Hallude | Tree | | |
| 20 | Anacardiaceae | *Lannea grandis* | Dabdabe | Tree | | |
| 21 | Anacardiaceae | *Mangifera indica* | Aanp | Tree | | |
| 22 | Anacardiaceae | *Rhus parviflora* | Sati bayer | Shrub | | |
| 23 | Anacardiaceae | *Semecarpus anacardium* | Bhalayo | Tree | | |
| 24 | Anacardiaceae | *Spondias amara* | Amaro | Tree | | |
| 25 | Anacardiaceae | *Spondias pinnata* | Amaro | Tree | | |
| 26 | Annoanaceae | *Milisusa velunina* | Dornsal | Tree | | |
| 27 | Annonaceae | *Annona squamosa* | Sarifa | Sh/Tree | | |
| 28 | Apiaceae | *Centella asiatica.* | Ghod tapre | Herb | | |
| 29 | Apocynaceae | *Alstonia scholaris* | Chhatiwan | Tree | | |
| 30 | Apocynaceae | *Carissa carandas* | Karenda | Shrub | | |
| 31 | Apocynaceae | *Carissa spinarum* | Karenda | Shrub | | |
| 32 | Apocynaceae | *Hollarrhena pubescens* | Khirro/ Indrajau | Tree | | |
| 33 | Apocynaceae | *Plumera rubra* | Choya Phool | Herb | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 34 | Apocynaceae | *Rauvolfia serpentina* | Sarpagandha | Shrub | | |
| 35 | Araceae | *Acorus calamus* | Bhojo | Herb | | |
| 36 | Araceae | *Arisaema sp.* | Sarpa makai | Herb | | |
| 37 | Asclepiadaceae | *Calotropis gigantea* | Ank | Shrub | | |
| 38 | Asclepiadaceae | *Calotropis procera* | Ank | Shrub | | |
| 39 | Asteraceae | *Ageratina adenophora* | Banmara | Shrub | | |
| 40 | Asteraceae | *Ageratum conyzoides* | Gande ghans | Herb | | |
| 41 | Asteraceae | *Ageratum houstonianum* | Gande ghans | Herb | | |
| 42 | Asteraceae | *Artemisia indica* | Titepati | Herb | | |
| 43 | Asteraceae | *Blumea balsamifera* | Gaitihare | Herb | | |
| 44 | Asteraceae | *Cirsium arvense /walichii* | Thakal | Herb | | |
| 45 | Asteraceae | *Gnaphalium affine* | Bokre phool | Herb | | |
| 46 | Asteraceae | *Parthenium hysterophorus* | Banmara | Herb | | |
| 47 | Asteraceae | *Tridax procumbens* | Putali Jhar | Herb | | |
| 48 | Asteraceae | *Xanthium strumarium* | Bhederuro | Herb | | |
| 49 | Basellaceae | *Basella alba* | | | | |
| 50 | Bignoniaceae | *Oroxylum indicum* | Tatelo | Tree | | |
| 51 | Bombacaceae | *Bombax ceiba* | Simal | Tree | | |
| 52 | Butomaceae | *Butomopsis latifolia* | Karkalo Jhar | Herb | | |
| 53 | Cannabaceae | *Cannabis sativa* | Ganja/Bhang | Shrub | | |
| 54 | Combretaceae | *Terminalia alata* | Asna/Saj | Tree | | |
| 55 | Combretaceae | *Terminalia bellirica* | Barro | Tree | | |
| 56 | Combretaceae | *Terminalia chebula* | Harro | Tree | | |
| 57 | Compositae | *Bidens pilosa* | Kalo Kuro | Herb | | |
| 58 | Convolvulaceae | *Cuscuta reflexa* | Akasbeli | Herb | | Parasite |
| 59 | Convolvulaceae | *Ipomea carnea* | Besaram | Shrub | | |
| 60 | Convolvulaceae | *Ipomea quamocli* | Jante phul | Climber | | |
| 61 | Cucurbitaceae | *Solena heterophylla* | | Climber | | |
| 62 | Dilleniaceae | *Dillenia pentagyna* | Tantari | Tree | | |
| 63 | Dioscoreaceae | *Dioscorea bulbifera* | Githa | Climber | | |
| 64 | Dioscoreaceae | *Dioscorea glabra* | Ban Tarul | Climber | | |
| 65 | Dioscoreaceae | *Dioscorea hispida* | Bharlang | Climber | | |
| 66 | Dioscoreaceae | *Dioscorea pentaphylla* | Bhyakur | Climber | | |
| 67 | Dipterocarpaceae | *Shorea robusta* | Sal | Tree | | |
| 68 | Ebenaceae | *Diospyros lancifolia* | Tandu | Tree | | |
| 69 | Ebenaceae | *Diospyros tomentosa* | Tandu | Tree | | |
| 70 | Equisetaceae | *Equisetum arvanse* | | Herb | | |
| 71 | Euphorbiaceae | *Bridelia retusa* | Gayo | Tree | | |
| 72 | Euphorbiaceae | *Euphorbia hirta* | Dudhejhar | Herb | | |
| 73 | Euphorbiaceae | *Jatropa curcas* | Sajiwon/Nimtel | Shrub | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 74 | Euphorbiaceae | *Jatropa gossypifolia* | | Shrub | | |
| 75 | Euphorbiaceae | *Mallotus phillippensis* | Sindure | Tree | | |
| 76 | Euphorbiaceae | *Phyllanthus emblica* | Amala | Tree | | |
| 77 | Euphorbiaceae | *Phyllanthus parvifolius* | Khareto | Shrub | | |
| 78 | Euphorbiaceae | *Phyllanthus virgatus* | | | | |
| 79 | Euphorbiaceae | *Riccinus communis* | Andir | Shrub | | |
| 80 | Euphorbiaceae | *Sapium insigne* | Khirro | Tree | | |
| 81 | Euphorbiaceae | *Securinega leucopyrus* | | | | |
| 82 | Euphorbiaceae | *Trewia nudiflora* | Vellar/Gutel | Tree | | |
| 83 | Fabaceae | *Abrus precatorius* | Rati gedi | Climber | | |
| 84 | Fabaceae | *Acacia catechu* | Khayer | Tree | | |
| 85 | Fabaceae | *Acacia farnesiana* | | | | |
| 86 | Fabaceae | *Acacia pennata* | Arali kanda | Climber | | |
| 87 | Fabaceae | *Acacia rugata* | Sikakai | | | |
| 88 | Fabaceae | *Albizia lebbek* | Kalo Siris | Tree | | |
| 89 | Fabaceae | *Albizia procera* | Seto Siris | Tree | | |
| 90 | Fabaceae | *Bauhinia purpurea* | Tanki | Tree | | |
| 91 | Fabaceae | *Bauhinia vahlii* | Bhorla | Climber | | Vine |
| 92 | Fabaceae | *Bauhinia variegata* | Koiralo | Tree | | |
| 93 | Fabaceae | *Butea monosperma* | Palans | Tree | | |
| 94 | Fabaceae | *Cassia fistula* | Raj brikschha | Tree | | |
| 95 | Fabaceae | *Cassia occidentalis* | Thulo Tapre | Shrub | | |
| 96 | Fabaceae | *Cassia tora* | Tapre | Shrub | | |
| 97 | Fabaceae | *Clitoria ternatea* | Aparjitia Climber | | | |
| 98 | Fabaceae | *Crotolaria albida* | Bhendi phul | Herb | | |
| 99 | Fabaceae | *Crotolaria calycina* | | Herb | | |
| 100 | Fabaceae | *Crotolaria prostrata* | Chhunchhuni | Herb | | |
| 101 | Fabaceae | *Dalbergia latifolia* | Satisal | Tree | | |
| 102 | Fabaceae | *Dalbergia sissoo* | Sissoo | Tree | | |
| 103 | Fabaceae | *Desmodium gangeticum* | Sal-parni | Shrub | | |
| 104 | Fabaceae | *Desmodium hispida* | Bhurlang | Climber | | |
| 105 | Fabaceae | *Desmodium multiflorum* | Bhattmase | Sherb | | |
| 106 | Fabaceae | *Desmodium oojeinensis* | Sandan | Tree | | |
| 107 | Fabaceae | *Erythrina indica* | Faledo | Tree | | |
| 108 | Fabaceae | *Flemingia macrophylla* | Bhattwasi | Shrub | | |
| 109 | Fabaceae | *Flemingia strobilifera* | Bhattwasi | Shrub | | |
| 110 | Fabaceae | *Indigofera dosua* | Dusi swan | Shrub | | |
| 111 | Fabaceae | *Indigofera pulchella* | Sakhino | Shrub | | |
| 112 | Fabaceae | *Indopiptadenia oudhensis* | | | | |
| 113 | Fabaceae | *Macrotyloma uniflorum* | | | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 114 | Fabaceae | *Milletia auriculata* | Gauje lahara | Climber | | |
| 115 | Fabaceae | *Mimosa himalayana* | | | | |
| 116 | Fabaceae | *Mimosa pudica* | Lazzabati | Shrub | | |
| 117 | Fabaceae | *Pongamia pinnata* | Karengi/ Dithbarna | Tree | | |
| 118 | Fabaceae | *Spatholabus parviflora* | Debre lahara | Climber | | Vine |
| 119 | Fabaceae | *Uraria picta* | | | | |
| 120 | Hydrocharitaceae | *Ottelia alismoides.* | | | | |
| 121 | Labiatae | *Mentha spicata* | | | | |
| 122 | Leeaceae | *Leea asiatica* | Galeni | Shrub | | |
| 123 | Liliaceae | *Asparagus adscendens* | Kurilo/Satabari | Herb | | |
| 124 | Liliaceae | *Asparagus racimosa* | Kurilo | Herb | | |
| 125 | Liliaceae | *Theropogan pallidus* | | | | |
| 126 | Lineaceae | *Reinwardtia indica* | Bakre ghans/ Pyauli | Shrub | | |
| 127 | Lythraceae | *Lagerstroemia parviflora* | Bot dhangero | Tree | | |
| 128 | Lythraceae | *Woordfordia fruticosa* | Rani dhangero | Shrub | | |
| 129 | Malpighiaceae | *Aspidopterys nutans* | | | | |
| 130 | Malvaceae | *Abelmoschus manihot* | | | | |
| 131 | Malvaceae | *Abelmoschus moschatus* | Kasturi | Herb | | |
| 132 | Malvaceae | *Abutilon indicum* | | | | |
| 133 | Malvaceae | *Kydia calycina* | Bohori | Tree | | |
| 134 | Malvaceae | *Malvastrum americanum* | | | | |
| 135 | Malvaceae | *Malvastrum coromandelianum* | | | | |
| 136 | Malvaceae | *Sida cordata* | Dalle kuro | Shrub | | |
| 137 | Malvaceae | *Sida cordifolia* | Dalle kuro | Shrub | | |
| 138 | Malvaceae | *Sida rhombifolia* | Sano chillya | Shrub | | |
| 139 | Malvaceae | *Sida spinosa* | Walu/Balu | Shrub | | |
| 140 | Malvaceae | *Thespesia lampas* | Ban kapas | Shrub | | |
| 141 | Malvaceae | *Urena lobata* | Nalu kuro | Shrub | | |
| 142 | Meliaceae | *Azadirachta indica* | Neem | Tree | | |
| 143 | Meliaceae | *Heynea trijuga* | Ankatari | Shrub | | |
| 144 | Meliaceae | *Melia azederach* | Bakaino | Tree | | |
| 145 | Meliaceae | *Toona ciliata* | Tooni | Tree | | |
| 146 | Menispermaceae | *Cissampelos pareira* | Batul pate | Climber | | |
| 147 | Menispermaceae | *Tinospora cordifolia* | Gurjo | Climber | | |
| 148 | Moraceae | *Ficus auriculata* | Timila | Tree | | |
| 149 | Moraceae | *Ficus benghalensis* | Bar | Tree | | |
| 150 | Moraceae | *Ficus benjamina* | Sami | Tree | | |
| 151 | Moraceae | *Ficus clavata* | Berulo | Tree | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 152 | Moraceae | *Ficus glaberrima* | Pakhure | Tree | | |
| 153 | Moraceae | *Ficus hispida* | Kharseto | Tree | | |
| 154 | Moraceae | *Ficus lacor* | Kavro | Tree | | |
| 155 | Moraceae | *Ficus racemosa* | Gular | Tree | | |
| 156 | Moraceae | *Ficus religiosa* | Peepal | Tree | | |
| 157 | Moraceae | *Ficus semicordata* | Khanim | Tree | | |
| 158 | Moraceae | *Morus alba* | Kimbu | Tree | | |
| 159 | Myrsinaceae | *Ardisia macrocarpa* | Damai phul | Shrub | | |
| 160 | Myrsinaceae | *Myrasine semiserrata* | Kali kath | Tree | | |
| 161 | Myrtaceae | *Careya arborea* | Kumbhi | Tree | | |
| 162 | Myrtaceae | *Cleistocalyx operculata* | | | | |
| 163 | Myrtaceae | *Eucalyptus citriodora* | Masala | Tree | | |
| 164 | Myrtaceae | *Eugenia operculata* | Kyamuna | Tree | | |
| 165 | Myrtaceae | *Psidium guajava* | Amba | Tree | | |
| 166 | Myrtaceae | *Syzygium cumini* | Jamun | Tree | | |
| 167 | Myrtaceae | *Syzygium frondosa* | Farim | Tree | | |
| 168 | Nyctaginaceae | *Boerhaavia diffusa* | Punarwa | Herb | | |
| 169 | Oleaceae | *Nyctanthes arbortristis* | Parijat | Tree | | |
| 170 | Orchidaceae | *Aerides odoratum* | | | II | |
| 171 | Orchidaceae | *Habenaria furcifera* | | | II | |
| 172 | Orchidaceae | *Trudelia cristata* | | | II | |
| 173 | Orchidaceae | *Zeuxine strateumatica* | | | II | |
| 174 | Oxalidaceae | *Oxalis corniculata* | Chari amilo | Herb | | |
| 175 | Palmacae | *Phoenix aquilis* | Thakal | Herb/S | | |
| 176 | Palmae | *Phoenix loureiri var. humilis* | Thakal | Herb/S | | |
| 177 | Pinaceae | *Pinus roxburghii* | Khote Salla | Tree | | |
| 178 | Piperaceae | *Piper betel* | Pan | Climber | | |
| 179 | Piperaceae | *Piper longum* | Pipla | Climber | | |
| 180 | Poaceae | *Apluda mutica* | Dakle khar | Herb/ grass | | |
| 181 | Poaceae | *Arundinella nepalensis* | | | | |
| 182 | Poaceae | *Brothriochloa bladhii* | | | | |
| 183 | Poaceae | *Chrysopogan serrulatus* | Kagati ghans | Herb | | |
| 184 | Poaceae | *Cynoden dactylon* | Dubo | Herb | | |
| 185 | Poaceae | *Degetaria sp.* | Banso | Herb | | |
| 186 | Poaceae | *Dendrocalamus sp.* | Bans | Bamboo | | |
| 187 | Poaceae | *Desmostachya bipinnata* | Kush | Herb | | |
| 188 | Poaceae | *Eulalia contorta* | | | | |
| 189 | Poaceae | *Eulaliopsis binata* | Babiyo | Herb | | |
| 190 | Poaceae | *Imperata cylindrica* | Siru | Herb | | |
| 191 | Poaceae | *Narenga popherecoma* | Narkat | Herb | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 192 | Poaceae | *Pogonatherum paniceum* | | | | |
| 193 | Poaceae | *Themeda arundinaceae* | Khar/Dhaddi | Herb | | |
| 194 | Poaceae | *Thysanolaena maxima* | Amriso | Herb | | |
| 195 | Ponteridaceae | *Eichhornia crassipes* | Jal kumbhi | Herb | | |
| 196 | Rhamnaceae | *Ziziphus mauritiana Lam.* | Sita bayer | Tree | | |
| 197 | Rhamnaceae | *Zyzyphus jujuba* | Bayer | Shrub | | |
| 198 | Rhamnaceae | *Zyzyphus rugosa* | Hade bayer | Shrub | | |
| 199 | Rosaceae | *Prunus pasia* | Mayel | Tree | | |
| 200 | Rosaceae | *Rubus ellipticus* | Ainselu | Shrub | | |
| 201 | Rubiaceae | *Adina cordifolia* | Karma | Tree | | |
| 202 | Rubiaceae | *Anthocephalus chinensis* | Kadam | Tree | | |
| 203 | Rubiaceae | *Ganelia turgid* | | | | |
| 204 | Rubiaceae | *Hamiltonia suaveolens* | | | | |
| 205 | Rubiaceae | *Hymenodictyon excelsum* | Lodi karam/ Bhudkul | Tree | | |
| 206 | Rubiaceae | *Mitragyna parvifolia* | Faldu | Tree | | |
| 207 | Rubiaceae | *Rubia manjith* | Majhitho | Climber | | |
| 208 | Rubiaceae | *Wendlandia puberula* | Ban kanyu/ Tilka | Tree | | |
| 209 | Rubiaceae | *Xeromphis spinosa* | Maidal/Main kanda | Shrub | | |
| 210 | Rutaceae | *Aegle marmelos* | Bel | Tree | | |
| 211 | Rutaceae | *Murraya koenigii* | Asare | Shrub | | |
| 212 | Salicaceae | *Anogeissus latifolia* | Banjhi/ Dhaunki | Tree | | |
| 213 | Samydaceae | *Casearia tomemtosa* | Chilla | Tree | | |
| 214 | Santalaceae | *Osyris wightiana* | Nundhiki | Shrub | | |
| 215 | Sapindaceae | *Sapindus mukorossi* | Rittha | Tree | | Planted |
| 216 | Sapindaceae | *Schleichera oleosa* | Kusum | Tree | | |
| 217 | Sapotaceae | *Aesandra butyraceae* | Chyuri | Tree | | |
| 218 | Sapotaceae | *Madhuca longifoliavar indica* | Mahuwa | Tree | | |
| 219 | Schizaeaceae | *Lygodium japonicum* | | | | |
| 220 | Scrophulariaceae | *Mazus pumilus* | | | | |
| 221 | Scrophulariaceae | *Scoparia dulcis* | | | | |
| 222 | Simaraubaceae | *Picrasena javanica* | | | | |
| 223 | Smilacaceae | *Smilax ovalifolia* | Kukur daino | Climber | | |
| 224 | Solanaceae | *Datura stramonium* | Dhaturo | Shrub/H | | |
| 225 | Solanaceae | *Nicandra physalodes* | | | | |
| 226 | Solanaceae | *Solanum nigrum* | Jangali bihin | Shrub | | |
| 227 | Solanaceae | *Solanum torvum* | Thulo bihin | Shrub | | |

| S. N. | Family | Scientific Name | Local Name | Habit | CITES Status | Remarks |
|---|---|---|---|---|---|---|
| 228 | Solanaceae | *Solanum virginianum* | | | | |
| 229 | Solanaceae | *Solanum xanthocarpum* | Kantakari | Shrub | | |
| 230 | Sterculiaceae | *Helicteres isora* | | | | |
| 231 | Sterculiaceae | *Sterculia vellosa* | Odal | Tree | | |
| 232 | Stilaginaceae | *Antidesma diandrum* | Amari | Tree | | |
| 233 | Tiliaceae | *Grewia asiatica* | | | | |
| 234 | Tiliaceae | *Grewia disperma* | | | | |
| 235 | Tiliaceae | *Grewia glabra* | | | | |
| 236 | Tiliaceae | *Grewia helicterifolia* | | | | |
| 237 | Tiliaceae | *Grewia optiva* | Fusro/Bhimal | Tree | | |
| 238 | Typhaceae | *Typha angustifolia* | Pater | Herb | | |
| 239 | Ulmaceae | *Holeptelia integrefolia* | | Tree | | |
| 240 | Urticaceae | *Urtica dioca* | Sisnu | Herb | | |
| 241 | Verbenaceae | *Callicarpa macrophylla* | Dahi kamle | Shrub | | |
| 242 | Verbenaceae | *Caryopteris foetidia* | Khursani ghans | Shrub | | |
| 243 | Verbenaceae | *Caryopteris odorata* | | | | |
| 244 | Verbenaceae | *Clerodendron viscosum* | Bhanti | Shrub | | |
| 245 | Verbenaceae | *Clerodendrum indicum* | Chinde | Shrub | | |
| 246 | Verbenaceae | *Clerodendrum serratum* | Chua | Shrub | | |
| 247 | Verbenaceae | *Colebrockea oppositifolia* | Dhursul | Shrub | | |
| 248 | Verbenaceae | *Holmskioldia sanguinea* | Jhule phul | Shrub | | |
| 249 | Verbenaceae | *Lantana camara* | Banmara | Shrub | | |
| 250 | Verbenaceae | *Phyla nodiflora* | | | | |
| 251 | Verbenaceae | *Pogostemon bengalensis* | Rudilo | Shrub | | |
| 252 | Verbenaceae | *Premna barbata* | Gineri | Tree | | |
| 253 | Verbenaceae | *Premna interrupta* | Gineri | Tree | | |
| 254 | Verbenaceae | *Salvia plebeia* | | | | |
| 255 | Verbenaceae | *Tectona grandis* | Teak | Tree | | |
| 256 | Verbenaceae | *Vitex negundo* | Simali | Shrub | | |
| 257 | Vitaceae | *Ampelocissus latifolia* | | Climber | | |
| 258 | Vitaceae | *Ampleocissus sikkimensis* | | Climber | | |
| 259 | Vitaceae | *Cayratia trifolia* | | Climber | | |
| 260 | Vitaceae | *Cissus repens* | Purani | Climber | | |
| 261 | Vitaceae | *Vitis jacquemontii* | | Climber | | |
| 262 | Zingiberaceae | *Costus speciosus* | | | | |
| 263 | Zingiberaceae | *Hedychium gardnerianum* | | | | |
| 264 | Zygophyllaceae | *Tribulus terrestris* | Gokhur | Herb | | |

# Annex-II

## Lists of Mammals

| S.N. | Order | Family | Scientific name | Common name | Local name | Conservation status | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | NPWC Act | CITES Appendix | IUCN Red data | |
| 1 | Artiodactyala | Cervidae | *Axis axis* | Spotted deer | Chittal | | | VU | |
| 2 | | Cervidae | *Axis porcinus* | Hog deer | Laguna | | | EN | |
| 3 | | Bovidae | *Boselaphus tragocamelus* | Nilgai | Nilgai | | | VU | |
| 4 | | Cervidae | *Cervus unicolor* | Sambar deer | Jarayo | | | VU | |
| 5 | | Cervidae | *Muntiacus munitjac* | Barking deer | Rato mriga/ Ratuwa | | | VU | |
| 6 | | Bovidae | *Nemorhaedus goral* | Himalayan Ghoral | Ghoral | | I | NT | |
| 7 | | Suidae | *Sus scrofa* | Wild boar | Bandel | | | LC | |
| 8 | | Bovidae | *Tetracerus quadricornis* | Four Horned Antelope | Chauka | P | III | DD | |
| 9 | Carnivora | Canidae | *Canis aureus* | Jackal | Syal | | | LC | |
| 10 | | Canidae | *Cuon alpinus* | Wild dog | Ban kukur | | II | EN | |
| 11 | | Felidae | *Felis bengalensis* | Leopard cat | Chari Bagh | P | II | VU | |
| 12 | | Felidae | *Felis chaus* | Jungle cat | Ban biralo | | II | LC | |
| 13 | | | *Herpestes auropunctatus* | Common Mongoose | Nyauri | | | LC | |
| 14 | | | *Herpestes edwardsii* | Small Mongoose | Nyauri | | | LC | |
| 15 | | | *Prionodon pardicolor* | Spotted lingsang | Silu Biralo | P | I | EN | |
| 16 | | Canidae | *Hyayna hyaena* | Striped Hyeana | Hundar | P | | EN | |
| 17 | | | *Lutra perspicillata* | Smooth otter | Oth | | | EN | |
| 18 | | Ursidae | *Melurus ursinus* | Sloth Bear | Kaathe Bhalu | | I | EN | |

| S.N. | Order | Family | Scientific name | Common name | Local name | Conservation status | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | NPWC Act | CITES Appendix | IUCN Red data | |
| 19 | | Felidae | *Panthera pardus* | Leopard | Chituwa | | I | VU | |
| 20 | | Felidae | *Panthera tigris* | Royal Bengal Tiger | Bagh | P | I | EN | |
| 21 | | Viverriadae | *Viverricula indica* | Small Civet | Sano civet | | | LC | |
| 22 | | Viverriadae | *Viverra zibetha* | Large Civet | Tholo civet | | | NT | |
| 23 | | Canidae | *Vulpes bengalensis* | Indian Fox | Phyauro | | | VU | |
| 24 | Chiroptera | | *Cynopterus sphinx* | Short nosed fruit bat | Chamero | | | LC | |
| 25 | | | *Pipistrellus coromedra* | Indian pipistrelle | Chamero | | | LC | |
| 26 | | | *Scotophilus heath* | Yellow house bat | Chamero | | | LC | |
| 27 | Primates | | *Macaca mulatta* | Rhesus macaque | Rato Bandar | | II | LC | |
| 28 | | | *Presbytis entellus* | Tarai Grey Langur | Langur | | I | NT | |
| 29 | Rodentia | | *Funambulus pennati* | Palm Squirrel | Lokharke | | | LC | |
| 30 | | | *Hystrix indica* | Porcupine | Dumsi | | | LC | |
| 31 | | | *Pettaurista petaurista* | Red Gaint Flying Squirrel | Koiralo | | | LC | |
| 32 | | | *Rattus rattus* | House rat | Muso | | | LC | |
| 33 | Probscidea | Elephantidae | *Elephus maximus* | Asian Wild Elephant | Hatti | P | I | EN | |
| 34 | Pholidota | Manidae | *Manis crassicaudata* | Pangolin (Indian) | Saalak | P | II | EN | |

# Annex-III

## List of Birds

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| GALLIFORMES | | | | | |
| Phasianidae | | | | | |
| 1 | Black Francolin | *Francolinus francolinus* | कालो तित्रा | r2 | 1 |
| 2 | Grey Francolin # | *Francolinus pondicerianus* | कपिञ्जल तित्रा | r3 | 1 |
| 3 | Red Junglefowl | *Gallus gallus* | लुईचे | r1 | 1 |
| 4 | Indian Peafowl | *Pavo cristatus* | मुजुर | r1 | 1 |
| ANSERIFORMES | | | | | |
| Anatidae | | | | | |
| 5 | Ruddy Shelduck | *Tadorna ferruginea* | चखेवा चखेवी | w1 | 1 |
| 6 | Northern Pintail # | *Anas acuta* | सुईरोपुच्छ | w2 | 7 |
| 7 | Goosander | *Mergus merganser* | मणितुण्डक | w2 | 1 |
| CICONIIFORMES | | | | | |
| Ciconiidae | | | | | |
| 8 | Asian Openbill # | *Anastomus oscitans* | घुँगीफोर गरुड | r3 | 1 |
| 9 | Woolly-necked Stork * | *Ciconia episcopus* | लोभीपापी गरुड | r4 | 1 |
| Threskiornithidae | | | | | |
| 10 | Red-naped Ibis | *Pseudibis papillosa* | कर्रा साँवरी | r3 | 1 |
| Ardeidae | | | | | |
| 11 | Little Egret | *Egretta garzetta* | सानो सेतो बकुल्ला | r1 | 1 |
| 12 | Great Egret | *Casmerodius albus* | ठुलो सेतो बकुल्ला | r2 | 1 |
| 13 | Intermediate Egret | *Mesophoyx intermedia* | मझौला सेतो बकुल्ला | r2 | 1 |
| 14 | Cattle Egret | *Bubulcus ibis* | वस्तु बकुल्ला | r1 | 1 |
| 15 | Indian Pond Heron | *Ardeola grayii* | आसकोटे बकुल्ला | r1 | 1 |
| 16 | Little Heron | *Butorides striatus* | छोटाखुट्टे बकुल्ला | r3 | 1 |
| 17 | Grey Heron | *Ardea cinerea* | फुस्रो बकुल्ला | r3 | 2 |
| PELECANIFORES | | | | | |
| Phalacrocoracidae | | | | | |
| 18 | Little Cormorant | *Phalacrocorax niger* | सानो जलेवा | r2 | 2 |
| 19 | Great Cormorant | *Phalacrocorax carbo* | जलेवा | w1 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| FALCONIFORMES | | | | | |
| Falconidae | | | | | |
| 20 | Common Kestrel | *Falco tinnunculus* | बौंडाइ | r2 | 1 |
| 21 | Peregrine Falcon | *Falco peregrinus* | शाही बाज | r3 | 8 |
| Accipitridae | | | | | |
| 22 | Oriental Honey Buzzard | *Pernis ptilorhyncus* | मधुहा | r2 | 1 |
| 23 | Black-winged Kite | *Elanus caeruleus* | मुसे चील | r3 | 1 |
| 24 | Black Kite | *Milvus migrans* | कालो चील | r3 | 1 |
| 25 | Egyptian Vulture * # | *Neophron percnopterus* | सेतो गिद्ध | r4 | 2 |
| 26 | White-rumped Vulture*# | *Gyps bengalensis* | डंगर गिद्ध | r3 | 9 |
| 27 | Himalayan Vulture # | *Gyps himalayensis* | हिमाली गिद्ध | w3 | 1 |
| 28 | Eurasian Griffon | *Gyps fulvus* | खैरो गिद्ध | w4 | 9 |
| 29 | Crested Serpent Eagle | *Spilornis cheela* | काकाकुल | r1 | 1 |
| 30 | Shikra | *Accipiter badius* | शिक्रा | r2 | 1 |
| 31 | White-eyed Buzzard | *Butastur teesa* | जमल श्येनबाज | r2 | 2 |
| 32 | Steppe Eagle *# | *Aquila nipalensis* | गोमायु महाचील | w4 | 2 |
| 33 | Booted Eagle | *Hieraaetus pennatus* | काँधचन्द्र चील | w3 | 1 |
| 34 | Changeable Hawk Eagle | *Spizaetus cirrhatus* | शदलचील | r3 | 2 |
| GRUIFORMES | | | | | |
| Rallidae | | | | | |
| 35 | White-breasted Waterhen | *Amaurornis phoenicurus* | सिमकुखुरा | r2 | 1 |
| CHARADRIIFORMES | | | | | |
| Burhinidae | | | | | |
| 36 | Indian Thick-knee | *Burhinus indicus* | बगरबट्टाई | r3 | 1 |
| Charadriidae | | | | | |
| 37 | Little Ringed Plover | *Charadrius dubius* | लघु राजपुत्रिका | w2 | 1 |
| 38 | Kentish Plover | *Charadrius alexandrinus* | अलकचन्द्र राजपुत्रिका | w3 | 1 |
| 39 | Yellow-wattled Lapwing # | *Vanellus malarbaricus* | दोयम हुटिट्याउ | r4 | 2 |
| 40 | River Lapwing | *Vanellus duvaucelii* | खोले हुटिट्याउ | r3 | 1 |
| 41 | Red-wattled Lapwing | *Vanellus indicus* | हुटिट्याउँ | r2 | 1 |
| Scolopacidae | | | | | |
| 42 | Common Greenshank | *Tringa nebularia* | टिमटिमा | w2 | 1 |
| 43 | Green Sandpiper | *Tringa ochropus* | रुख सुङ्सुङिया | w2 | 1 |
| 44 | Common Sandpiper | *Actitis hypoleucos* | चञ्चले सुङसुङिया | w2 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| Glareolidae | | | | | |
| 45 | Small Pratincole | *Glareola lactea* | गौंथली | r3 | 2 |
| COLUMBIFORMES | | | | | |
| Columbidae | | | | | |
| 46 | Common Pigeon | *Columba livia* | मलेवा | r1 | 1 |
| 47 | Oriental Turtle Dove | *Streptopelia orientalis* | तामे ढुकुर | r2 | 1 |
| 48 | Laughing Dove | *Streptopelia senegalensis* | धुसर ढुकुर | r4 | 8 |
| 49 | Spotted Dove | *Streptopelia chinensis* | कुले ढुकुर | r1 | 1 |
| 50 | Red Collared Dove | *Streptopelia tranquebarica* | सानोतामे ढुकुर | r1 | 2 |
| 51 | Eurasian Collared Dove | *Streptopelia decaocto* | कण्ठे ढुकुर | r1 | 1 |
| 52 | Emerald Dove | *Chalcophaps indica* | हारील ढुकुर | r2 | 1 |
| 53 | Orange-breasted Green Pigeon | *Treron bicincta* | सुन्तलेछाती हलेसो | r3 | 2 |
| 54 | Yellow-footed Green Pigeon | *Treron phoenicoptera* | हलेसो | r3 | 2 |
| PSITTACIFORMES | | | | | |
| Psittacidae | | | | | |
| 55 | Alexandrine Parakeet | *Psittacula eupatria* | कर्रा सुगा | r1 | 1 |
| 56 | Rose-ringed Parakeet | *Psittacula krameri* | कण्ठे सुगा | r1 | 1 |
| 57 | Slaty-headed Parakeet | *Psittacula himalayana* | मदना सुगा | r3 | 1 |
| 58 | Plum-headed Parakeet | *Psittacula cyanocephala* | टुइँसी सुगा | r1 | 1 |
| CUCULIFORMES | | | | | |
| Cuculidae | | | | | |
| 59 | Common Hawk Cuckoo | *Hierococcyx varius* | बीउ कुहियो | r2 | 1 |
| 60 | Indian Cuckoo | *Cuculus micropterus* | काफल पाक्यो | s2 | 2 |
| 61 | Eurasian Cuckoo | *Cuculus canorus* | कुक्कु कोइली | s3 | 2 |
| 62 | Banded Bay Cuckoo | *Cacomantis sonneratii* | धर्के खैरो कोइली | r3 | 2 |
| 63 | Grey-bellied Cuckoo | *Cacomantis passerinus* | फुस्रो सानो कोइली | s3 | 1 |
| 64 | Asian Koel | *Eudynamys scolopacea* | कोइली | r2 | 2 |
| 65 | Green-billed Malkoha | *Phaenicophaeus tristis* | हरित मालकौवा | r3 | 1 |
| 66 | Sirkeer Malkoha | *Phaenicophaeus leschenaultii* | न्याउरी मालकौवा | r2 | 2 |
| 67 | Greater Coucal | *Centropus sinensis* | ढोडे गोकुल | r1 | 1 |
| STRIGIFORMES | | | | | |
| Strigidae | | | | | |
| 68 | Oriental Scops Owl | *Otus sunia* | लोखर्के उलुक | r3 | 2 |
| 69 | Asian Barred Owlet | *Glaucidium cuculoides* | ठूलो डुन्डुल | r3 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 70 | Jungle Owlet | *Glaucidium radiatum* | डुन्डुल | r1 | 1 |
| 71 | Spotted Owlet | *Athene brama* | कोचलगाँडे लाटो कोसेरो | r1 | 2 |
| 72 | Brown Hawk Owl | *Ninox scutulata* | कालपेचक | r2 | 1 |
| CAPRIMULGIFORMES | | | | | |
| Caprimulgidae | | | | | |
| 73 | Large-tailed Nightjar | *Caprimulgus macrurus* | लामपुच्छ्रे चैतेचरा | r2 | 2 |
| 74 | Savanah Nightjar | *Caprimulgus affinis* | चुइयाँ चैतेचरा | r2 | 1 |
| APODIFORMES | | | | | |
| Apodidae | | | | | |
| 75 | Himalayan Swiftlet | *Collocalia brevirostris* | चींचिका गौंथली | m | 1 |
| 76 | Asian Palm-Swift | *Cypsiurus balasiensis* | थाकल गौंथली | r3 | 2 |
| 77 | Alpine Swift | *Tachymarptis melba* | बतासी गौंथली | r4 | 1 |
| 78 | House Swift | *Apus affinis* | फिरफिरे घरगौंथली | r1 | 1 |
| 79 | Crested Treeswift | *Hemiprocne coronata* | जुरे गौंथली | r2 | 1 |
| CORACIIFORMES | | | | | |
| Upupidae | | | | | |
| 80 | Common Hoopoe | *Upupa epops* | फाप्रे चरा | w3 | 1 |
| Coraciidae | | | | | |
| 81 | Indian Roller | *Coracias benghalensis* | ठेउवा | r2 | 1 |
| 82 | Dollarbird | *Eurystomus orientalis* | लालचुच्चे ठेउवा | s3 | 2 |
| Alcedinidae | | | | | |
| 83 | Common Kingfisher | *Alcedo atthis* | सानो माटीकोरे | r2 | 1 |
| 84 | Stork-billed Kingfisher | *Pelargopsis capensis* | ठूलो माटीकोरे | r2 | 1 |
| 85 | White-throated Kingfisher | *Halcyon smyrnensis* | सेतोकण्ठे माटीकोरे | r1 | 1 |
| 86 | Crested Kingfisher | *Megaceryle lugubris* | ठूलो छिरबिरे माटीकोरे | r4 | 1 |
| 87 | Pied Kingfisher | *Ceryle rudis* | छिरबिरे माटीकोरे | r2 | 1 |
| Meropidae | | | | | |
| 88 | Blue-bearded Bee-eater | *Nyctyornis athertoni* | मधुमक्षी भक्षका | r3 | 1 |
| 89 | Green Bee-eater | *Merops orientalis* | मुरलीचरा | r1 | 1 |
| 90 | Blue-tailed Bee-eater | *Merops philippinus* | नीलपुच्छ्रे मुरलीचरा | s2 | 2 |
| 91 | Chestnut-headed Bee-eater | *Merops leschenaulti* | कटुसटाउके मुरलीचरा | s2 | 2 |
| Bucerotidae | | | | | |
| 92 | Indian Grey Hornbill | *Ocyceros birostris* | सानो धनेश | r2 | 1 |
| 93 | Oriental Pied Hornbill | *Anthracoceros albirostris* | कालो धनेश | r2 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 94 | Great Hornbill # | *Buceros bicornis* | राजधनेश | r4 | 10 |
| PICIFORMES | | | | | |
| Ramphastidae | | | | | |
| 95 | Great Barbet | *Megalaima virens* | न्याउली | r4 | 2 |
| 96 | Brown-headed Barbet | *Megalaima zeylanica* | कुमछिर्के कुथुर्के | r1 | 1 |
| 97 | Lineated Barbet | *Megalaima lineata* | छिर्के कुथुर्के | r2 | 1 |
| 98 | Blue-throated Barbet | *Megalaima asiatica* | कुथुर्के | r3 | 1 |
| 99 | Coppersmith Barbet | *Megalaima haemacephala* | मिलचरा | r3 | 1 |
| Picidae | | | | | |
| 100 | Speckled Piculet | *Picumnus innominatus* | थोप्ले ससिया | r3 | 2 |
| 101 | Brown-capped Pygmy Woodpecker | *Dendrocopos nanus* | पुन्टे काष्ठकुट | r3 | 1 |
| 102 | Grey-capped Pygmy Woodpecker | *Dendrocopos canicapillus* | फुस्रोटाउके काष्ठकुट | r2 | 1 |
| 103 | Brown-fronted Woodpecker | *Dendrocopos auriceps* | खैरोटाउके काष्ठकुट | r4 | 1 |
| 104 | Fulvous-breasted Woodpecker | *Dendrocopos macei* | काष्ठकुट | r3 | 1 |
| 105 | Yellow-crowned Woodpecker | *Dendrocopos mahrattensis* | पहेंलोटाउके काष्ठकुट | r3 | 1 |
| 106 | Rufous Woodpecker | *Celeus brachyurus* | सानो तामे लाहाँचे | r4 | 2 |
| 107 | Lesser Yellownape | *Picus chlorolophus* | सुनजुरे काठफोर | r3 | 1 |
| 108 | Streak-throated Woodpecker | *Picus xanthopygaeus* | कत्ले काठफोर | r3 | 2 |
| 109 | Grey-headed Woodpecker | *Picus canus* | कालोगर्दने काठफोर | r2 | 1 |
| 110 | Himalayan Goldenback | *Dinopium shorii* | तीनऔंले लाहाँचे | r1 | 1 |
| 111 | Lesser Goldenback | *Dinopium benghalense* | कालोढाडे लाहाँचे | r2 | 2 |
| 112 | Greater Goldenback | *Chrysocolaptes lucidus* | गर्दनथोप्ले लाहाँचे | r2 | 1 |
| 113 | Great SlatyWoodpecker * # | *Mulleripicus pulverulentus* | राजलाहाँचे | r4 | 1 |
| PASSERIFORMES | | | | | |
| Pittidae | | | | | |
| 114 | Indian Pitta | *Pitta brachyura* | गाजले पिट्टा | s3 | 2 |
| Campephagidae | | | | | |
| 115 | Large Cuckooshrike | *Coracina macei* | लटुशक विरहीचरी | r1 | 1 |
| 116 | Black-winged Cuckooshrike | *Coracina melaschistos* | कालो विरहीचरी | r2 | 1 |
| 117 | Small Minivet | *Pericrocotus cinnamomeus* | सानो रानीचरी | r1 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 118 | Long-tailed Minivet | *Pericrocotus ethologus* | लामपुछ्रे चैतेचरा | r2 | 1 |
| 119 | Scarlet Minivet | *Pericrocotus flammeus* | रानीचरी | r1 | 1 |
| 120 | Bar-winged Flycatcher-shrike | *Hemipus picatus* | आसकोटे चरी | r1 | 1 |
| 121 | Large Woodshrike | *Tephrodornis gularis* | ठूलो टेन्था | r2 | 7 |
| 122 | Common Woodshrike | *Tephrodornis pondicerianus* | टेन्था | r1 | 1 |
| Artamidae | | | | | |
| 123 | Ashy Woodswallow | *Artamus fuscus* | भिथुन | r2 | 1 |
| Aegithinidae | | | | | |
| 124 | Common Iora | *Aegithina tiphia* | सुसेलीचरी | r1 | 1 |
| Laniidae | | | | | |
| 125 | Brown Shrike | *Lanius cristatus* | खैरो भद्राई | w3 | 1 |
| 126 | Bay-backed Shrike | *Lanius vittatus* | चित्रक भद्राई | r4 | 2 |
| 127 | Long-tailed Shrike | *Lanius schach* | भद्राई | r2 | 1 |
| 128 | Grey-backed Shrike | *Lanius tephronotus* | हिमाली भद्राई | w2 | 1 |
| Dicruridae | | | | | |
| 129 | Black Drongo | *Dicrurus macrocercus* | कालो चिबे | r1 | 1 |
| 130 | Ashy Drongo | *Dicrurus leucophaeus* | ध्वाँसे चिबे | r2 | 1 |
| 131 | White-bellied Drongo | *Dicrurus caerulescens* | सेतोपेटे चिबे | r1 | 1 |
| 132 | Spangled Drongo | *Dicrurus hottentottus* | केशराज चिबे | r1 | 1 |
| 133 | Greater Racket-tailed Drongo | *Dicrurus paradiseus* | भीमराज चिबे | r1 | 1 |
| Oriolidae | | | | | |
| 134 | Indian Golden Oriole | *Oriolus (oriolus) kundoo* | गाजले सुनचरी | s3 | 2 |
| 135 | Black-hooded Oriole | *Oriolus xanthornus* | कालोटाउके सुनचरी | r1 | 1 |
| Rhipiduridae | | | | | |
| 136 | Yellow-bellied Fantail | *Rhipidura hypoxantha* | पहेंलो मारुनीचरी | r3 | 1 |
| 137 | White-throated Fantail | *Rhipiduraalbicollis* | नक्कले मारुनीचरी | r2 | 2 |
| 138 | White-browed Fantail | *Rhipidura aureola* | कुमथोप्ले मारुनीचरी | r3 | 1 |
| Monarchidae | | | | | |
| 139 | Black-naped Monarch | *Hypothymis azurea* | राजचरी | r2 | 1 |
| 140 | Asian Paradise-flycatcher | *Terpsiphone paradisi* | स्वर्गचरी | s2 | 2 |
| Corvidae | | | | | |
| 141 | Red-billed Blue Magpie | *Urocissa erythrorhyncha* | स्यालपोथरी लामपुच्छ्रे | r2 | 1 |
| 142 | Rufous Treepie | *Dendrocitta vagabunda* | कोकले | r1 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 143 | House Crow | *Corvus splendens* | घर काग | r1 | 1 |
| 144 | Large-billed Crow | *Corvus macrorhynchos* | कालो काग | r1 | 1 |
| Paridae | | | | | |
| 145 | Great Tit | *Parus major* | चिचिल्कोटे | r1 | 1 |
| 146 | Black-lored Tit | *Parus xanthogenys* | पाण्डु चिचिल्कोटे | r3 | 1 |
| Hirundinidae | | | | | |
| 147 | Plain Martin | *Riparia paludicola* | भित्तेगौंथली | r1 | 1 |
| 148 | Barn Swallow | *Hirundo rustica* | घर गौंथली | r1 | 1 |
| 149 | Red-rumped Swallow | *Hirundo daurica* | गेरुकटी गौंथली | r2 | 1 |
| Alaudidae | | | | | |
| 150 | Rufous-winged Lark | *Mirafra assamica* | भारद्वाज | r2 | 1 |
| 151 | Ashy-crowned Sparrow Lark | *Eremopterix grisea* | चश्मे भारद्वाज | r2 | 1 |
| 152 | Sand Lark | *Calandrella raytal* | बगर भारद्वाज | r1 | 1 |
| 153 | Crested Lark | *Galerida cristata* | जुरे भारद्वाज | r3 | 1 |
| 154 | Oriental Skylark | *Alauda gulgula* | ब्राह्मीचटी | r3 | 2 |
| Pycnonotidae | | | | | |
| 155 | Black-crested Bulbul | *Pycnonotus melanicterus* | कालाकल्की जुरेली | r2 | 1 |
| 156 | Red-whiskered Bulbul | *Pycnonotus jocosus* | श्वेतवक्ष जुरेली | r1 | 2 |
| 157 | Himalayan Bulbul | *Pycnonotus leucogenys* | जुल्फे जुरेली | r2 | 1 |
| 158 | Red-vented Bulbul | *Pycnonotus cafer* | जुरेली | r1 | 1 |
| 159 | Black Bulbul | *Hypsipetes leucocephalus* | बाखे जुरेली | r2 | 1 |
| Cisticolidae | | | | | |
| 160 | Zitting Cisticola | *Cisticola juncidis* | फिर्फिरे | r2 | 1 |
| 161 | Striated Prinia | *Prinia criniger* | सुया घाँसेफिस्टो | r2 | 2 |
| 162 | Grey-breasted Prinia | *Prinia hodgsonii* | फुस्रोछाती घाँसे फिस्टो | r1 | 1 |
| 163 | Jungle Prinia | *Priniasylvatica* | जङ्गल घाँसेफिस्टो | r3 | 1 |
| 164 | Ashy Prinia | *Prinia socialis* | टुणुक् घाँसेफिस्टो | r3 | 1 |
| 165 | Plain Prinia | *Prinia inornata* | झाँक्री घाँसेफिस्टो | r2 | 1 |
| Sylviidae | | | | | |
| 166 | Blyth's Reed Warbler | *Acrocephalus dumetorum* | ट्याकट्याके | r1 | 2 |
| 167 | Thick-billed Warbler | *Acrocephalus aedon* | मोटोठुँडे ट्याकट् याके | w2 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 168 | Common Tailorbird | *Orthotomus sutorius* | पातसिउने फिस्टो | r1 | 1 |
| 169 | Common Chiffchaff | *Phylloscopus collybita* | चिप्चिपे फिस्टो | w2 | 1 |
| 170 | Tickell's Leaf Warbler | *Phylloscopus affinis* | पीतोदर फिस्टो | w3 | 1 |
| 171 | Ashy-throated Warbler | *Phylloscopus maculipennis* | फुस्रोकण्ठे फिस्टो | w3 | 1 |
| 172 | Yellow-browed Warbler | *Phylloscopus inornatus* | हरित फिस्टो | wm | 1 |
| 173 | Hume's Leaf Warbler | *Phylloscopus humei* | चञ्चले फिस्टो | w2 | 1 |
| 174 | Greenish Warbler | *Phylloscopus trochiloides* | जीवल फिस्टो | w1 | 1 |
| 175 | Western Crowned Warbler | *Phylloscopus occipitalis* | ठूलो तालुधर्के फिस्टो | m | 2 |
| 176 | Grey-hooded Warbler | *Seicercus xanthoschistos* | तुमुलकारी फिस्टो | w3 | 1 |
| Timaliidae | | | | | |
| 177 | White-crested Laughingthrush | *Garrulax leucolophus* | हिउँजुरे तोरीगाँडा | r3 | 2 |
| 178 | Puff-throated Babbler | *Pellorneum ruficeps* | थोप्ले भ्याकुर | r1 | 1 |
| 179 | Striped Tit Babbler | *Macronous gularis* | पीतोदर फिस्टे भ्याकुर | r1 | 1 |
| 180 | Jungle Babbler | *Turdoides striatus* | बगाले भ्याकुर | r1 | 1 |
| 181 | White-bellied Erpornis | *Erpornis zantholeuca* | सेतोपेटे जुरेचरा | r3 | 2 |
| Zosteropidae | | | | | |
| 182 | Oriental White-eye | *Zosterops palpebrosus* | कांकीर | r1 | 1 |
| Sittidae | | | | | |
| 183 | Chestnut-bellied Nuthatch | *Sitta castanea* | कटुसे मट्टा | r1 | 1 |
| 184 | Velvet-fronted Nuthatch | *Sitta frontalis* | मखमली मट्टा | r1 | 1 |
| 185 | Wallcreeper | *Tichodroma muraria* | मुरारी पुतलीचरा | w4 | 1 |
| Sturnidae | | | | | |
| 186 | Chestnut-tailed Starling | *Sturnus malabaricus* | फुस्रोटाउके सारौं | r1 | 2 |
| 187 | Brahminy Starling | *Sturnus pagodarum* | जुरे सारौं | r3 | 2 |
| 188 | Common Myna | *Acridotheres tristis* | डाङ्ग्रे रुपी | r1 | 1 |
| 189 | Jungle Myna | *Acridotheres fuscus* | वन रुपी | r2 | 1 |
| Turdidae | | | | | |
| 190 | Blue Whistling Thrush | *Myophonus caeruleus* | कल्चौंडे | r2 | 1 |
| 191 | Scaly Thrush | *Zoothera dauma* | गोब्रे चाँचर | w3 | 1 |
| 192 | Tickell's Thrush | *Turdus unicolor* | फुस्रे चाँचर | w4 | 2 |
| 193 | Grey-winged Blackbird | *Turdus boulboul* | मदना चाँचर | w4 | 1 |
| Muscicapidae | | | | | |
| 194 | Asian Brown Flycatcher | *Muscicapa dauurica* | धुसर अर्जुनक | m | 2 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 195 | Rufous-gorgetted Flycatcher | *Ficedula strophiata* | सेतोटिके अर्जुनक | w3 | 1 |
| 196 | Taiga Flycatcher | *Ficedula albicilla* | लालकण्ठे अर्जुनक | r2 | 1 |
| 197 | Snowy-browed Flycatcher | *Ficedula hyperythra* | सेतोआँखीभौं अर्जुनक | r4 | 1 |
| 198 | Verditer Flycatcher | *Eumyias thalassina* | नीलतुथो अर्जुनक | w2 | 1 |
| 199 | Small Niltava | *Niltava macgrigoriae* | सानो नीलतभा | r4 | 1 |
| 200 | Pale-chinned Flycatcher | *Cyornis poliogenys* | नौनीकण्ठे अर्जुनक | r3 | 1 |
| 201 | Blue-throated Flycatcher | *Cyornis rubeculoides* | नीलकण्ठे अर्जुनक | m | 2 |
| 202 | Tickell's Blue Flaycatcher | *Cyornis tickelliae* | नीलो अर्जुनक | r4 | 1 |
| 203 | Grey-headed Canary Flycatcher | *Culicicapa ceylonensis* | चञ्चले अर्जुनक | w3 | 1 |
| 204 | Bluethroat | *Luscinia svecica* | भुमिचर नीलकण्ठ | w3 | 2 |
| 205 | Oriental Magpie Robin | *Copsychus saularis* | धोबिनी चरा | r1 | 1 |
| 206 | White-rumped Shama | *Copsychus malabaricus* | श्यामा | r2 | 1 |
| 207 | Indian Robin | *Saxicoloides fulicata* | देवी श्यामा | r1 | 1 |
| 208 | BlackRedstart | *Phoenicurus ochruros* | ध्याप्ची खञ्जरी | w2 | 1 |
| 209 | White-capped Water Redstart | *Chaimarrornis leucocephalus* | सेतोटाउके जलखञ्जरी | r3 | 1 |
| 210 | Plumbeous Water Redstart | *Rhyacornis fuliginosus* | नीलाम्बर जलखञ्जरी | r3 | 1 |
| 211 | Black-backed Forktail | *Enicurus immaculatus* | कालोढाडे खोलेधोबिनी | r4 | 1 |
| 212 | Hodgson's Bushchat * # | *Saxicola insignis* | सेतोकण्ठे धिप्सी | w5 | 1 |
| 213 | Common Stonechat | *Saxicola torquata* | झेकझेक झ्याप्सी | r2 | 1 |
| 214 | Pied Bushchat | *Saxicola caprata* | काले झ्याप्सी | r2 | 1 |
| 215 | Grey Bushchat | *Saxicola ferrea* | हिमाली झ्याप्सी | r3 | 1 |
| Irenidae | | | | | |
| 216 | Golden-fronted Leafbird | *Chloropsis aurifrons* | कृष्णकण्ठे हरितचरी | r3 | 1 |
| Dicaeidae | | | | | |
| 217 | Thick-billed Flowerpecker | *Dicaeum agile* | मोटोठुँडे पुष्पकोकिल | r3 | 1 |
| 218 | Pale-billed Flowerpecker | *Dicaeum erythrorynchos* | रातोठुँडे पुष्पकोकिल | r2 | 1 |
| 219 | Plain Flowerpecker | *Dicaeum concolor* | समरुप पुष्पकोकिल | r2 | 2 |
| Nectariniidae | | | | | |
| 220 | Purple Sunbird | *Nectarinia asiatica* | कालोबुङ्गेचरा | r2 | 1 |
| 221 | Crimson Sunbird | *Aethopyga siparaja* | सिपराजा बुङ्गेचरा | r3 | 1 |
| Passeridae | | | | | |
| 222 | House Sparrow | *Passer domesticus* | घर भँगेरा | r1 | 1 |

| S.N. | Common Name | Scientific Name | Nepali Name | Status | Reference |
|---|---|---|---|---|---|
| 223 | Chestnut-shouldered Petronia | *Petronia xanthocollis* | पीतकण्ठे भँगेरा | r1 | 1 |
| Ploceidae | | | | | |
| 224 | Baya Weaver | *Ploceus philippinus* | बया तोपचरा | r2 | 1 |
| Estrildidae | | | | | |
| 225 | Scaly-breasted Munia | *Lonchura punctulata* | कोटेरो मुनियाँ | r2 | 1 |
| Motacillidae | | | | | |
| 226 | White Wagtail | *Motacilla alba* | सेतो टिकटिके | r1 | 1 |
| 227 | White-browed Wagtail | *Motacilla maderaspatensis* | खोले टिकटिके | r2 | 1 |
| 228 | Yellow Wagtail | *Motacilla flava* | पहेलो टिकटिके | m | 2 |
| 229 | Grey Wagtail | *Motacilla cinerea* | फुस्रो टिकटिके | w3 | 1 |
| 230 | Paddyfield Pipit | *Anthus rufulus* | आली चुइयाँ | r1 | 1 |
| 231 | Long-billed Pipit | *Anthus similis* | लामोठुँडे चुइयाँ | w3 | 1 |
| 232 | Tree Pipit | *Anthus trivialis* | बगाले चुइयाँ | w3 | 1 |
| 233 | Olive-backed Pipit | *Anthus hodgsoni* | रुख चुइयाँ | w1 | 1 |
| 234 | Rosy Pipit | *Anthus roseatus* | गुलाफीकण्ठे चुइयाँ | w2 | 2 |
| Emberizidae | | | | | |
| 235 | Crested Bunting | *Melophus lathami* | जुरे बगेडी | w3 | 1 |
| 236 | Pine Bunting | *Emberiza leucocephalos* | सल्ले बगेडी | w5 | 1 |

Source: Birds of BaNP (2016)

**Key to the codes**

* Globally Threatened
\# Nationally Threatened
r Resident
s Summer migrant
w Winter migrant
m Passage migrant
v Vagrant
1 Common
2 Fairly common
3 Uncommon
4 Rare
5 Very rare

# Annex-IV

## Lists of Hetero-fauna

| S. N. | Order | Family | Scientific name | Common name | Local name | Conservation status | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | NPWC Act | CITES | IUCN Red data | |
| **A** | **Reptiles** | | | | | | | | |
| 1 | Sauria | Agamida | *Laudakia tuberculata* | Rock Lizard | Bhir Chheparo | | | LC | |
| 2 | | Cordylidae | *Calotes versicolor* | Garden lizard | Baghaiche Chheparo | | | LC | |
| 3 | Serpentes | Pythonidae | *Python bivittatus* | Burmese Python | Ajingar | P | I | NT | |
| 4 | | Colubridae | *Ptyas mucosa* | Common cat snake | Dhaaman Sarpa | | | LC | |
| 5 | | Dendrelaphis tristis | *Bronzeback Tree snake* | Sirise Rukh Sarpa | | | LC | | |
| 6 | | Ferania sieboldii | *Siebold's water snake* | Chille Pani Sap | | | LC | | |
| 7 | | Lycodon aulicus | *Common wolf-snake* | Bwase- sarpa | | | LC | | |
| 8 | | Lycodon jara | *Twin spotted wolf snake* | Jor Thople Sikhaphyancha | | | LC | | |
| 9 | | Fowleav piscator | *checkered keelback* | Khote Dhodia Sap | | | LC | | |
| 10 | Crocodylia | Crocodylidae | *Crocodylus palustris* | Mugger crocodile | Mugger Gohi | | I | VU | |
| 11 | Serpentes | Elapidae | *Bungarus caeruleus* | Common krait | Krait | | | LC | |
| 12 | | Naja naja | *Common Cobra* | Dui Thople Goman | | II | LC | | |
| 13 | Testudines | Geoemydiadae | *Pangshura tecta* | Indian-roofed turtle | Dhuri Kachuwa | | II | NT | |
| 14 | Sauria | Gekkonidae | *Hemidactylus cf brookii* | Brook's Gecko | Thople Ghar Bhitti | | | LC | |

| S. N. | Order | Family | Scientific name | Common name | Local name | Conservation status | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | NPWC Act | CITES | IUCN Red data | |
| 15 | Sauria | Scincidae | *Eutropis carinata* | Common Grass skink | Bhanemungro | | | LC | |
| 16 | | Eutropis macularia | *Bronze grass skink* | Khase Ghase Bhanemungro | | | LC | | |
| 17 | | Lygosoma albo-punctata | *Suppled grass skink* | Setothople Baunne Bhanemungro | | | LC | | |
| 18 | Serpentes | Typhlopidae | *Indotyphlops braminus* | Brahminy blind snake | Andho sarpa | | | LC | |
| 19 | | Argyrophis diardii | *Diard's blind snake* | Andho sarpa | | | LC | | |
| 20 | | Viperidae | *Russell's Viper* | Russell's viper | Ghodkaret | | | LC | |
| 21 | Sauria | Varanidae | *Varanus flavescens* | Golden Monitor Lizard | Sun Gohoro | P | I | EN | |
| 22 | | Varanus bengalensis | *Bengal Monitor Lizard* | Bhaise Gohoro | | I | NT | | |
| **B** | **Amphibians** | | | | | | | | |
| 1 | Anura | Bufonidae | *Duttaphrynus bengalensis* | Common Asian Toad | Matyangre Khasre Bhyaguto | | | LC | |
| 2 | | | *Duttaphrynus stomaticus* | Marbled toad | Kalo Kade Khasre Bhyaguto | | | LC | |
| 3 | | Microhylidae | *Microhyla ornata* | Narrow-mouth Frog | Thutune Bhyaguto | | | LC | |
| 4 | | Dicroglossidae | *Euphlyctis adolfi* | Skittering frog | Ahale Bhyaguto | | | LC | |
| 5 | | | *Fejarvarya teraiensis* | Terai cricket frog | Kithre 6Bhyaguto | | | LC | |
| 6 | | | *Minervarya syhadrensis* | Syhadra Cricket Frog | Kirthe Bhyaguto | | | LC | |
| 7 | | | *Hoplobatrachus tigerinus* | Indian Bull frog | Sigare Bhyaguto | | | LC | |
| 8 | | Rhacopboridae | *Polypedates maculatus* | Common Tree frog | Bhyaguto | | | LC | |

# Annex-V

## Details of existing administrative units of the park

| SN | Name | X | Y | Report to |
|---|---|---|---|---|
| 1 | Obhari HQ | 580383 | 3111194 | |
| 2 | Dhakeri RP | 574557 | 3115073 | Obhari |
| 3 | Buchapur EC | 575506 | 3116933 | Obhari |
| 4 | Changai Nala Post | 575875 | 3112582 | Obhari |
| 5 | Khari Post | 590867 | 3105538 | Obhari |
| 6 | Kusum Sector | 608897 | 3098728 | HQ |
| 7 | Sikta RP | 596336 | 3101612 | Kusum |
| 8 | Malai RP | 604892 | 3109003 | Kusum |
| 9 | Thati Post | 609992 | 3106794 | Kusum |
| 10 | Shivakhola Post | 616548 | 3096191 | Kusum |
| 11 | Kyureni Post | 593745 | 3122760 | Kusum |
| 12 | Kohalpur Sector | 567824 | 3119515 | HQ |
| 13 | Khadgabar RP | 571499 | 3122539 | Kohalpur |
| 14 | Chisapani RP | 564882 | 3129404 | Kohalpur |
| 15 | Ghuiyabari RP | 582498 | 3129932 | Kohalpur |
| 16 | Chyama* | 564719 | 3128458 | Kohalpur |
| 17 | Khadgabar EC | 571414 | 3123222 | Kohalpur |
| 18 | Pragatinagar Post | 570309 | 3118979 | Kohalpur |
| 19 | Mahadeva Post | 573869 | 3118872 | Kohalpur |
| 20 | Sutaiya Post | 568386 | 3126425 | Kohalpur |
| 21 | Deurali Post | 566117 | 3134826 | Kohalpur |
| 22 | Hattidamar Post | 587503 | 3126934 | Kohalpur |

# Annex-VI

## Details of existing grasslands of the park

| SN | Name | X | Y |
|---|---|---|---|
| 1 | Gotheri | 597322 | 3102476 |
| 2 | Thuriya | 587354 | 3114082 |
| 3 | Jalseni | 579333 | 3116691 |
| 4 | Giddeni chaur | 569615 | 3124242 |
| 5 | Sirukholi | 599285 | 3103103 |
| 6 | Upper Dobai | 590383 | 3116676 |
| 7 | Lower Dobai | 588906 | 3114761 |
| 8 | Buchapur | 578273 | 3118312 |
| 9 | Chunbhatti | 583303 | 3118494 |
| 10 | Balapur | 581099 | 3115380 |
| 11 | Hattigauda | 568348 | 3129516 |
| 12 | Obhari New | 581194 | 3113035 |
| 13 | Muguwa Machan GL | 588693 | 3114065 |
| 14 | Muguwa Khola GL | 588920 | 3114839 |
| 15 | Thuriya New | 587290 | 3114026 |
| 16 | Panimuhan Old | 597218 | 3106911 |
| 17 | Gandhieli Old | 593340 | 3104735 |
| 18 | Panimunah New | 595149 | 3105528 |
| 19 | Gandheli New | 593868 | 3105642 |
| 20 | Khairi GL | 591255 | 3105673 |
| 21 | Gotheri 2 | 597603 | 3102576 |
| 22 | Karauti GL | 568239 | 3129515 |
| 23 | GhariKhare | 575875 | 3126202 |
| 24 | Shivakhola | 615935 | 3096877 |

# Annex-VII

## Details of existing waterholes in the park

| SN | Remarks | X | Y |
|---|---|---|---|
| 1 | Ranigajari 3 | 608079 | 3099271 |
| 2 | Ranigajari 1 | 608047 | 3099150 |
| 3 | Khoche Khola | 604320 | 3101748 |
| 4 | Giddenichaur | 569466 | 3124213 |
| 5 | Panimuhan | 597236 | 3106926 |
| 6 | Panimuhan | 597282 | 3106938 |
| 7 | Shivakhola | 616395 | 3096309 |
| 8 | Jalseni | 579215 | 3116727 |
| 9 | Buchapur | 578296 | 3118462 |
| 10 | Paruwa Chata | 583119 | 3114424 |
| 11 | Near Obhary | 581740 | 3111976 |
| 12 | Gotheri | 597801 | 3102570 |
| 13 | Dhakeri | 575987 | 3112640 |
| 14 | Sirukholi | 599472 | 3103433 |
| 15 | Way to Chunbhatti | 581120 | 3115407 |
| 16 | Karaunti Damar | 568555 | 3129577 |
| 17 | Balapur | 579989 | 3113827 |
| 18 | Lokmarga | 576991 | 3118537 |
| 19 | South to Sikta post | 596625 | 3102167 |
| 20 | Gotheri | 596956 | 3102310 |
| 21 | Gotheri | 597568 | 3102653 |
| 22 | Sirukhali | 599186 | 3102286 |
| 23 | Sirukhali | 599761 | 3103172 |
| 24 | Sauri khola | 605687 | 3100911 |
| 25 | Lalmati danda | 603329 | 3102115 |
| 26 | Kale Khola | 602897 | 3101241 |
| 27 | Sani Khali | 602317 | 3101613 |
| 28 | Mathillo Sani Khali | 602241 | 3102263 |
| 29 | Tallo Sani Khali | 602889 | 3103259 |
| 30 | Purano bato | 601749 | 3101179 |

| SN | Remarks | X | Y |
|---|---|---|---|
| 31 | Gabhar Khola | 601643 | 3102036 |
| 32 | Deli Khola | 601643 | 3102036 |
| 33 | Rajbasdamar | 601078 | 3102798 |
| 34 | Mahikhola danda | 600872 | 3101648 |
| 35 | Kamal pokhari | 599453 | 3101546 |
| 36 | Gabhar danda | 598768 | 3102126 |
| 37 | Bhurikhola | 598342 | 3102268 |
| 38 | Way to Sirukhali | 605068 | 3099306 |
| 39 | Karauti Grassland area | 568397 | 3129481 |
| 40 | Karauti Grassland area | 568533 | 3129567 |
| 41 | Bhaludamar | 568504 | 3129969 |
| 42 | Bhaludamar | 567096 | 3129460 |
| 43 | Khadgavar | 573993 | 3125101 |
| 44 | Khadgavar | 572058 | 3125440 |
| 45 | Obhary | 581619 | 3113601 |
| 46 | Obhary | 582099 | 3113943 |
| 47 | Khari Bagh | 591047 | 3105397 |
| 48 | North of Gandheli bridge | 592888 | 3105315 |
| 49 | North of Gandheli Machan | 593557 | 3105029 |
| 50 | Pani Muhan fireline | 596956 | 3106552 |
| 51 | Pani Muhan fireline | 595919 | 3105788 |
| 52 | Pani Muhan fireline | 595017 | 3105519 |
| 53 | Pani Muhan fireline | 594202 | 3104181 |
| 54 | Gotheri | 597777 | 3102599 |
| 55 | Gotheri | 597755 | 3102607 |
| 56 | Sirukhali grassland | 600973 | 3102614 |
| 57 | Shivakhola | 615880 | 3096820 |
| 58 | Shivakhola | 613542 | 3098045 |
| 59 | Gandheli 1 | 593368 | 3104704 |
| 60 | Gandheli 3 | 593602 | 3105176 |
| 61 | Kohalpur sector | 567805 | 3119518 |
| 62 | Kusum sector | 608870 | 3098807 |
| 63 | Sauri khola | 604372 | 3100990 |
| 64 | Kali khola | 604393 | 3100741 |

| SN | Remarks | X | Y |
|---|---|---|---|
| 65 | Ranigajari 2 | 608004 | 3099230 |
| 66 | Obhari | 580338 | 3111333 |
| 67 | Jalseni 2 | 579372 | 3116684 |
| 68 | Bainskhola | 610038 | 3099058 |
| 69 | Bageswori 1 | 602770 | 3098523 |
| 70 | Bageswori 2 | 602772 | 3098594 |
| 71 | Bidhyut pokhari | 607476 | 3099698 |
| 72 | Sirukhali Opposite 1 | 602410 | 3100288 |
| 73 | Sirukhali Opposite 2 | 602552 | 3100261 |
| 74 | Chyama | 566601 | 3128722 |
| 75 | Khadgavar | 573471 | 3125227 |
| 76 | Khadgavar Hattisar | 571519 | 3123308 |
| 77 | Bikashnagar 1 | 568684 | 3122337 |
| 78 | Bikashnagar 2 | 569147 | 3121330 |
| 79 | Near Obhary 2 | 581716 | 3112294 |
| 80 | Gandheli | 592985 | 3104197 |
| 81 | Panimuhan 3 | 596393 | 3106099 |
| 82 | Panimuhan 2 | 596115 | 3105884 |

# Annex-VIII

## Details of Park Budget

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Park Protection | | | | | | | | | | |
| A | Deployment of Nepal Army | | | | | | | | | | |
| | Maintain all the existing range and security posts regularly | No | 14 | 500000 | 7000000 | 1400000 | 1470000 | 1543500 | 1620675 | 1701709 | 7735884 |
| | Develop all the range and security posts with accommodation facility and power supplies | No | 14 | 500000 | 7000000 | 1400000 | 1470000 | 1543500 | 1620675 | 1701709 | 7735884 |
| | Construct joint posts at strategic locations | No | 2 | 2000000 | 4000000 | 2000000 | | 2200000 | | | 4200000 |
| | Construct infrastructure (Posts) to deploy army and park staff immediately | No | 5 | 2000000 | 10000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431012.5 | 11051263 |
| | Conduct orientation on biodiversity conservation and controlling poaching to newly deputed security units | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Procure boat for patrolling in Rapti and Babai river | No | 5 | 1500000 | 7500000 | 1500000 | 1575000 | 1653750 | 1736438 | 1823259 | 8288447 |
| | Increase surveillance using spy camera at strategic locations | No | 50 | 50000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Continue surveillance across the highway using CCTV | No | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Continue smart patrolling in the park area | Times | 50 | 200000 | 10000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431013 | 11051263 |
| | Construct watch tower in the core area | No | 15 | 1500000 | 22500000 | 4500000 | 4725000 | 4961250 | 5209312.5 | 5469778 | 24865341 |
| | Extend the forest roads to cover every nook and corner of the park | km | 50 | 250000 | 12500000 | 2500000 | 2625000 | 2756250 | 2894063 | 3038766 | 13814078 |
| | **Total** | | | | | 18700000 | 17535000 | 20611750 | 19332338 | 20298954 | 96478042 |
| | | | | | | | | | | | |
| B | Hattisar Management | | | | | | | | | | |
| | Construct different physical infrastructure (buildings for staff, shed house, grain store house, water storage facility etc) to support Hattisar management | No | 10 | 2000000 | 20000000 | 4000000 | 4200000 | 4410000 | 4630500 | 4862025 | 22102525 |
| | Establish new Hattisar at East Gavar area | No | 1 | 10000000 | 10000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431013 | 11051263 |
| | Conduct biophysical and social survey to assess fodder availability in the core area and in the BZ | No | 1 | 1000000 | 1000000 | 1000000 | | | | | 1000000 |
| | Encourage fodder species plantation in the BZ | ha | 25 | 200000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Construct power fence enclosure and concrete boundary wall for Hattisar complex | No | 2 | 5000000 | 10000000 | 5000000 | | 5500000 | | | 10500000 |
| | Administer medicine and provide supplement vitamins to elephants | No | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762815 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Conduct health checkup at least twice in a year | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762815 |
| | Construct solar fencing at different strategic locations | km | 25 | 1200000 | 30000000 | 6000000 | 6300000 | 6615000 | 6945750 | 7293038 | 7657689 |
| | **Total** | | | | | 20000000 | 14700000 | 20935000 | 16206750 | 17017088 | 63362739 |
| | | | | | | | | | | | |
| C | Anti Poaching and Intelligence Gathering | | | | | | | | | | |
| | Conduct periodic WCCB meeting | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Mobilize informants at different strategic locations | Times | 25 | 500000 | 12500000 | 2500000 | 2625000 | 2756250 | 2894063 | 3038766 | 13814078 |
| | Provide capacity building training to anti-poaching unit and RRT | No | 5 | 1000000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Provide basic equipment, vehicle and logistics to anti-poaching unit and RRT | No | 5 | 3000000 | 15000000 | 3000000 | 3150000 | 3307500 | 3472875 | 3646519 | 16576894 |
| | Strengthen and institutionalize CBAPU (Information purchase) | Times | 25 | 200000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Encourage and mobilize eco club and local youth clubs against illegal activities | Times | 50 | 100000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Launch patrolling i.e. SRP/ MRP/LRP, sweep operation, smart, river/boat patrolling, camping, elephant based patrolling, informant mobilization) | Times | 50 | 100000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Disseminate information to BZ communities against wildlife crime | Times | 5 | 500000 | 2500000 | 5000000 | 5250000 | 5512500 | 5788125 | 6077531 | 27628156 |
| | Continue awareness programmes to youth, community and stakeholders | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Prepare database regarding wildlife crime for decision making | No | 1 | 500000 | 500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | **Total** | | | | | 16000000 | 16800000 | 17640000 | 18522000 | 19448100 | 88410100 |
| | | | | | | | | | | | |
| | **Habitat Management** | | | | | | | | | | |
| A | **Forest** | | | | | | | | | | |
| | Apply mechanical/ manual methods to uproot and burn invasive species periodically | No | 5 | 1000000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Regular patrolling in fringe area to discourage open grazing | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Conduct orientation program to live stock holders/herders to restrict grazing in the BZCF | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Sensitize BZ communities for possible HWC in the fringe area | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Extend fire line networks to confine forest fire in a particular block | km | 50 | 200000 | 10000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431013 | 11051263 |
| | Maintain fire line network for easy accessibility for fire fighting | km | 50 | 50000 | 2500000 | 250000 | 262500 | 275625 | 289406 | 303877 | 1381408 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Disseminate information of legal punishment for involvement in extraction of forest products from core area of the park | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Carry out control fire to support forest regeneration | km | 50 | 200000 | 10000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431013 | 11051263 |
| | **Total** | | | | | 7250000 | 7612500 | 7993125 | 8392781 | 8812420 | 40060827 |
| | | | | | | | | | | | |
| | Grassland | | | | | | | | | | |
| | Construct new grassland area to increase at the suitable sites | ha | 250 | 50000 | 12500000 | 2500000 | 2625000 | 2756250 | 2894063 | 3038766 | 13814078 |
| | Manage previously developed grassland periodically | ha | 250 | 20000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Carry out effectiveness study of different management intervention in the grasslands | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Construct view tower, machan, to monitor grassland habitat use by wildlife and fire outbreak | No | 5 | 1200000 | 6000000 | 1200000 | 1260000 | 1323000 | 1389150 | 1458608 | 6630758 |
| | Establish permanent plot for ecological study of grassland habitat | No | 1 | 1000000 | 1000000 | 1000000 | | | | | 1000000 |
| | Apply mechanical/ manual methods to uproot and burn invasive species periodically | ha | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Mapping of all the grasslands in both the Park and BZ and carry-out periodic monitoring to support management and decision-making | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Construct waterholes nearby grasslands | No | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | 6100000 | 5855000 | 6122750 | 5903888 | 6199082 | 30180719 |
| | | | | | | | | | | | |
| | Wetlands | | | | | | | | | | |
| | Maintain spring water source available in the park | No | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Install solar water pumps to recharge waterholes | No | 25 | 500000 | 12500000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Maintain the existing small waterholes large enough to retain rain water for longer period | No | 25 | 600000 | 15000000 | 3000000 | 3150000 | 3307500 | 3472875 | 3646519 | 16576894 |
| | Construct new large sized waterholes | No | 25 | 1000000 | 25000000 | 5000000 | 5250000 | 5512500 | 5788125 | 6077531 | 27628156 |
| | Conduct cleaning and removal of vegetation cover in the waterholes periodically | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607753 | 2762816 |
| | Test water quality of water holes | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Conduct mapping of wetlands and plan their interventions | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | **Total** | | | | | 10400000 | 10395000 | 10914750 | 11460488 | 12033512 | 55203749 |
| | | | | | | | | | | | |
| | **Fire Management** | | | | | | | | | | |
| | Intensify patrolling during dry season | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Set up firefighting equipment in all the posts | Set | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sensitize community against the fire disaster before the onset of fire season | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide fire fighting training to frontline staffs | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Erect signage along the highway at regular interval | No | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Prepare and keep detail record of fire occurrence locations manually | Times | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Use RS and GIS tools and techniques to map fire prone areas spatially and temporally | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Install forest fire early warning systems | No | 5 | 300000 | 1500000 | 300000 | 315000 | 330750 | 347288 | 364652 | 1657689 |
| | Provide training to park staffs, security personnel and BZCF members for firefighting | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Construct and repair firelines in forest fire prone areas | ha | 50 | 20000 | 1000000 | 2000000 | 2100000 | 2205000 | 2315250 | 2431013 | 11051263 |
| | Form firefighting teams with the help of Park, BZUC, BZCFs and other local bodies | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Construct watch tower at strategic points of the park | No | 2 | 1000000 | 2000000 | 1000000 | 1050000 | | | | 2050000 |
| | Mobilize fire fighting team with equipment in order to stop spreading of fire in grasslands | Times | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Undertake early burning of grasslands on the basis of burning regime and create firebreaks annually | Times | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Carry out fire prevention education and awareness activities to the local community | Times | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide thatch grass cutting to BZ communities before onset of dry season | No | 5 | 10000 | 50000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Conduct awareness of forest fire through mass communication programmes (Radio, TV, newspaper) | Times | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | **Total** | | | | | 6000000 | 5775000 | 4961250 | 5209313 | 5469778 | 27415341 |
| | | | | | | | | | | | |
| | **Wildlife Health Management** | | | | | | | | | | |
| | Establish wildlife orphanage and rescue centre in at least two sectors | No | 2 | 5000000 | 10000000 | 5000000 | 5250000 | | | | 10250000 |
| | Treat injured animal upon arrival at orphanage and rescue centre | Times | 25 | 20000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide timely medication to wounded / injured wildlife | Times | 20 | 50000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Support vaccination of livestock around the BZ through LSO | TImes | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Support for livestock husbandry (improved breed, vet services, grass cultivation, trough) | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Management of feral dogs in and around the Park (1 km buffer) | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Procure diagnostic accessories, medicine, wildlife ambulance and dart gun in the park | Set | 1 | 1500000 | 1500000 | 1500000 | | | | | 1500000 |
| | Report and document mortality of wild animals immediately after it comes to notice of any staff as part of disease surveillance strategy | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Coordinate with LSO to undertake post-mortem of deceased endangered wild animals | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Carry out regular check-up of elephant at Hattisar and treat them accordingly | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Train staff to collect wildlife sample of blood, fecal matter, urine or vital organs | People | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Build capacity of frontline staff to recognize, record and report disease or poor health condition of animals | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Control of open grazing through awareness programme of potential HWC | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Support student to study problem related to wildlife diseases and zoonotic diseases | No | 2 | 50000 | 100000 | 50000 | | 55000 | | | 105000 |
| | Total | | | | | 8050000 | 6825000 | 1708750 | 1736438 | 1823259 | 20143447 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Encroachment Management** | | | | | | | | | | |
| | Survey and mapping of encroached areas | No | 1 | 750000 | 750000 | 750000 | | | | | 750000 |
| | Maintain the database of the encroached area | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Demarcate Park boundary physically | No | 1 | 3000000 | 3000000 | 1500000 | 1575000 | | | | 3075000 |
| | Demarcate and fence BZCF as well as ailani land in the buffer zone | No | 50 | 50000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Maintain the database of the encroached area | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Plant and restore of fence open areas | ha | 25 | 200000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Conduct extension programmes against forest land encroachment | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Conduct series of interaction programmes with people representatives and politicians about the issues of encroachment | No | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| | Monitoring and patrolling at strategic sites | Times | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Proceed timely actions against encroachers | Times | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | **Total** | | | | | 3550000 | 2835000 | 3976750 | 3125588 | 3281867 | 16769204 |
| | | | | | | | | | | | |
| | **Research** | | | | | | | | | | |
| | **Species Conservation** | | | | | | | | | | |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Update information on list of flora and fauna of BaNP | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Population distribution and regeneration status of threatened plant species of BaNP | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Compile all available scientific information on tigers and prey species focusing ecological, methodological and human impact topics | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Undertake intensive research on transboundary movement of tigers and the use of corridors | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Study distribution and abundance of various prey base species | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Study spatial distribution and abundance of four horned antelope, hyaena and golden monitor lizard | No | 1 | 500000 | 500000 | | | | | 500000 | 500000 |
| | Genetic study of key wildlife species such as tiger and four-horned antelope | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Population dynamics, habitat use and resource partitioning of sympatric wildlife species | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Behavioral and habitat ecology of important herpetofaunas (Python and golden monitor lizard) | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Update digital database maps using latest topo-sheets, satellite imageries and aerial photographs for updating tiger information | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Status and threats of different fish species | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Status of Gharial and Mugger crocodile in Rapti river | No | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| | Status and abundance of turtle | No | 1 | 100000 | 100000 | | | | | 100000 | 100000 |
| | Undertake detailed studies on ungulate-habitat relationships and the feeding behavior of ungulates | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Movement and ranging behavior of elephant with special focus on human-wildlife conflict | No | 1 | 500000 | 500000 | | | | | 500000 | 500000 |
| | Study of captive held elephant diseases and behavior | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Least studied species and its habitat like small mammals (mouse, rat, shrew, bat etc.), herpetofauna (python and golden monitor lizard), butterfly, insects, fish etc. | No | 1 | 1000000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Study population status of Swamp francolin, Bengal florican, Black stork, White stork, Vulture and their respective habitats | No | 1 | 1000000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pattern and trend of bird migration; migratory birds both general and species-wise | No | 1 | 1000000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Assessment of impact of sikta irrigation canal on wildlife species | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Assessment the impact east-west highway on wildlife species | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Feasibility study for introduction of Dolphin in Bheri River | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Feasibility study for introduction of Gaur in BaNP | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Total | | | | | 2300000 | 2230000 | 2261500 | 2294575 | 1829304 | 10915379 |
| | **Habitat management** | | | | | | | | | | |
| | Vegetation dynamics and its impact on wildlife habitat | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Grassland management practices and its impact on conservation | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Prepare land use management plans for critical habitats of tigers in the Park and BZ | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Impact of fencing on population distribution of wildlife species | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Spatial and Temporal pattern of fire incidences in BaNP and its BZ | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |
| | Prepare fire management and action plan for mitigating the effects of forest fire on wildlife | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Carry out wetlands and grasslands mapping and assess their successional dynamics to inform management prescriptions | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Study distribution and abundance of palatable grass species | No | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| | Undertake study to identify the succession pattern of grasslands, forests and wetlands | No | 1 | 100000 | 100000 | | | | | 100000 | 100000 |
| | Conduct study on the effect of habitat fragmentation and degradation on wildlife survival | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Study and document indigenous knowledge, skills and practices for wetland conservation | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | **Total** | | | | | 700000 | 700000 | 600000 | 600000 | 100000 | 2700000 |
| | | | | | | | | | | | |
| | Tourism | | | | | | | | | | |
| | Document perception of visitors about the tourism facilities and services from hotels and Park authorities | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Study to identify potential tourism products and their packaging | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Aspiration of hotel operators regarding services and cooperation from the Park | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Conduct study to identify potential site to promote homestay | No | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| | Impact of Banke National Park at local and national level in one decade | No | 1 | 100000 | 100000 | | | | | 100000 | 100000 |
| | **Total** | | | | | 100000 | 100000 | 100000 | 100000 | 100000 | 500000 |
| | | | | | | | | | | | |
| | **Climate change and Livelihood** | | | | | | | | | | |
| | Carry out research on possible impacts of climate change on wildlife population | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Identification and monitoring of climate sensitive species on a long-term | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |
| | Vulnerability assessment of small-holder farmers against climate change | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Vulnerability assessment of important ecosystem of BaNP and its BZ | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Vulnerability assessment of threatened plant and animal species | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Vulnerability assessment of indigenous communities against climate change | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prepare BZ community-based adaptation plan | No | 1 | 500000 | 500000 | | | | | 500000 | 500000 |
| | Study on impact of climate change on major ecosystem services | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Assessment of Traditional Ecological Knowledge of the park and its BZ | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Total | | | | | 1000000 | 600000 | 600000 | 1000000 | 500000 | 3700000 |
| | **Monitoring** | | | | | | | | | | |
| | **Species monitoring** | | | | | | | | | | |
| | Monitoring of tiger on periodic basis based on camera trap | Year | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Monitor tigers around the BZ with local community engagement | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Monitoring of four horned antelope on periodic basis based on direct count | Year | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Monitoring of indicator species such as frogs and toads | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Monitor prey base species on regular interval | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |
| | Monitoring of small mammals | No | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| | Monitoring of reptiles | No | 1 | 100000 | 100000 | | | | | 100000 | 100000 |
| | Monitoring of globally threatened and nationally protected birds | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | **Total** | | | | | 1200000 | 1150000 | 1202500 | 1257625 | 1315506 | 6125631 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | Habitat monitoring | | | | | | | | | | |
| | Periodic grassland monitoring | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Periodic forests cover monitoring | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Monitor impacts of floods and extended droughts on wildlife habitats | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| | Periodic wetlands and water holes monitoring including water quality | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Monitor spatial and temporal pattern of fire incidence | No | 1 | 100000 | 100000 | | | 100000 | | | 100000 |
| | Monitor fire and fuel dynamics | No | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| | Monitor extraction of soil, sand and gravel in coordination with local authority | No | 1 | 100000 | 100000 | | | | | 100000 | 100000 |
| | Total | | | | | 300000 | 310000 | 320500 | 331525 | 343101 | 1605126 |
| | | | | | | | | | | | |
| | **Wildlife health monitoring** | | | | | | | | | | |
| | Periodic health monitoring of captive elephants in Hattisar | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| | Total | | | | | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| | | | | | | | | | | | |
| | **Tourism monitoring** | | | | | | | | | | |
| | Periodic monitoring of tourism impact on ecological and social environment | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Periodic monitoring of impact of tourism on socio-economic conditions of BZ communities | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| | | | | | | | | | | | |
| | **Capacity Building** | | | | | | | | | | |
| | Refreshment trainings to the field staffs and security personnel | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121550 | 552563 |
| | Orientation training to frontline staff on legal issues | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Training on Real-time SMART patrolling to Park staff and security personnel | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Conduct anti-poaching operation trainings to Park staffs and security personnel | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Conduct crime scene investigation and interrogation trainings to investigators as per legal provision | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Human rights training to handle the accused people | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Provide training to mid-level technical staff on wildlife monitoring and handling techniques, GPS, GIS, SMART, and habitat monitoring | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Basic training on vegetation analysis for recording data in monitoring plots | No | 1 | 100000 | 100000 | 100000 | | | | | 100000 |
| | Conduct forest fire management training to the Park staffs, security personnel and BZCF members | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Provide social mobilization and participatory planning training to staff | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Provide training to rangers and officers on CITES Act implementation | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Provide exposure visit to Rangers and Officers to other protected areas | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |
| | Provide refresher training to Hattisar Staff on elephant mobilization, tourism hospitality, elephant healthcare, elephant patrol | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |
| | Provide trainings to nature guides to enhance their capacity in nature interpretation specifically on wildlife, birds and plants | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Conflict management training | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |
| | Community-based climate vulnerability assessment and adaptation planning training | No | 1 | 200000 | 200000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Provide conservation awareness training to BZUGs, BZUCs and BZMC members | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Provide leadership training to BZUCs and BZMCs members | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Provide account and record keeping training to BZUCs and BZMCs members | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | 2600000 | 2625000 | 2756250 | 2894062 | 3038765 | 13914078 |
| | | | | | | | | | | | |
| | **Species Special Conservation Program** | | | | | | | | | | |
| | **Tiger** | | | | | | | | | | |
| | Compile all available scientific information on tigers and prey species focusing ecological, methodological and human aspects that have management relevance | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Conduct study and research on tigers and its prey species by collaborating with national and international Universities | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Restore, maintain and manage grassland by uprooting and cleaning of invasive species to support a healthy population of tiger and prey species | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173643 | 182325 | 828844 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Construct water recharge pond and water harvesting dams in Churia and foothills to provide water for animals during dry seasons | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173643 | 182326 | 828844 |
| | Update digital database maps using latest topo-sheets, satellite imageries and aerial photographs for updating tiger information | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Prepare land use plans for critical habitats of tigers outside PA and manage them on the basis of land use plans | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | Erect signage of warning to the passersby in the major rights of ways, resource collection sites and shrines | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | Celebrate world tiger day on 29th July every year and take opportunity to promote tiger conservation awareness during other ceremonies such as (Wildlife Week, Environment Day, Wetland Day, Earth Day, Biodiversity Day) | Times | 25 | 50000 | 1250000 | 250000 | 262500 | 275625 | 289406 | 303877 | 1381407 |
| | Support livestock farming in collaboration with local government | Set | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Support alternative to firewood to poor households of buffer zone community nearby forests | No | 25 | 50000 | 1250000 | 250000 | 262500 | 275625 | 289406 | 303877 | 1381407 |
| | Support to promote alternative livelihood entrepreneur to poor households of buffer zone community nearby forests | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Management of problematic tiger | Times | 5 | 1000000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Conduct awareness campaigns at the local level | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Launch behavioral change campaign in forest edge communities | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121551 | 552563 |
| | Total | | | | | 3050000 | 3177500 | 3311375 | 3451944 | 3099541 | 16090360 |
| | | | | | | | | | | | |
| | **Four Horned Antelope** | | | | | | | | | | |
| | Develop action plan to increase the grassland and shrub coverage | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Construct new waterholes and restore old ones at critical habitat sites | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121550.6 | 552563 |
| | Conduct invasive species control measures at critical habitat sites | ha | 25 | 20000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |
| | Increase awareness towards conservation of FHA | No | 5 | 200000 | 1000000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Carry out spatial distribution and abundance study of FHA using appropriate tools and techniques | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Enforce strict regulation towards illegal wildlife trade | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | Conduct awareness programmes related to FHA conservation to all relevant stakeholders | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550.6 | 552563 |
| | Total | | | | | 950000 | 972500 | 496125 | 520931 | 546977 | 3486534 |
| | | | | | | | | | | | |
| | **Elephant** | | | | | | | | | | |
| | Erect solar fence to prevent elephant strayed in the settlement especially in those areas where conflict is severe thereby reducing human-wild elephant conflict | km | 25 | 500000 | 12500000 | 2500000 | 2625000 | 2756250 | 2894062.5 | 3038766 | 13814078 |
| | Carry out piloting of early warning system of wild elephant straying nearby settlements | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578812.5 | 607753.1 | 2762816 |
| | Construct RCC watch towers at strategic location to monitor movement of wild elephant | No | 5 | 1000000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | Provide subsidies for alternative agriculture crops which are unpalatable to elephant in the BZ | Times | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762 | 121550 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Provide the relief to the victims of human loss, agriculture loss, and property loss by wild elephant | Year | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Conduct conservation awareness activities to reduce human elephant conflict | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Total | | | | | 4500000 | 4725000 | 4961250 | 5209312 | 5469778 | 24865341 |
| | | | | | | | | | | | |
| | **Ecotourism and Interpretation** | | | | | | | | | | |
| | Construct and operate seven entry gates for visitors in Shiva khola, Kusum, Sikta, Dhakeri, Chisapani, Sutaiya and Khadkabar | No | 7 | 1200000 | 8400000 | 2400000 | 1200000 | 2400000 | 1200000 | 1200000 | 8400000 |
| | Construct multipurpose VICs at Kohalpur and Obhari that includes ticket counter, display centre, museum, documentary showing hall, souvenir shop, refreshment centre, and rest room | No | 2 | 1500000 | 3000000 | 1500000 | 1500000 | | | | 3000000 |
| | Place display boards with information on tourist destination areas and tourism products of BaNP in Bhairahawa and Nepalgunj Airport | No | 2 | 250000 | 500000 | | | | 250000 | 250000 | 500000 |
| | Place display boards in the VICs of BNP and KrCA to attract visitors in BaNP | No | 2 | 250000 | 500000 | | | 250000 | 250000 | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Construct, maintain and repair concrete or wooden watch towers at appropriate locations near grasslands and waterholes | Times | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Erect hoarding boards informing Do's and Don'ts in the Park and BZ for the visitors | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Place signage at appropriate location in the Park to show direction to the visitors | No | 10 | 20000 | 200000 | 50001 | 52501 | 55126 | 57882 | 60777 | 276287 |
| | Construct raised platforms to climb for elephant safari, at least, in two places | No | 2 | 500000 | 1000000 | | 500000 | | 500000 | | 1000000 |
| | Construct cultural house and museums in the BZ | No | 2 | 1000000 | 2000000 | 1000000 | | | | 1000000 | 2000000 |
| | Support BZ community to operate community lodges and homestays in the tourist hubs of the BZ especially in Gavar valley, Balapur and Buchapur | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Place advertisement boards of elephant and jeep safari in the Park | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Prepare Video Spot to promote tourism in BaNP | No | 1 | 20000 | 20000 | 200000 | | | | | 200000 |
| | Advertise tourism products in the Park through Television, Radio and FM radio at national and local level | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Organize meetings and training to promote local entrepreneur and nature guide to operate jeep safari and other facilities in the Park | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Conduct nature guide trainings to local and interested individuals giving priority to indigenous and marginalized communities and youths | No | 5 | 300000 | 1500000 | 300000 | 315000 | 330750 | 347288 | 364652 | 1657689 |
| | Enhance capacity of nature guides in nature interpretation especially on wildlife, birds, plants through trainings and some experience sharing activities | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Conduct home-stay, house-keeping and cook trainings at Aghaiya, Dhakeri, Khadkabar, Gavar valley, Balapur and Buchapur | No | 6 | 300000 | 1800000 | | | 600000 | 630000 | 661500 | 1891500 |
| | Organize cottage and small business development and management training | No | 4 | 50000 | 200000 | | 50000 | 52500 | 55125 | 57881 | 215506 |
| | Provide support to journalists to visit BaNP and publish article | Times | 4 | 500000 | 2000000 | | 500000 | 525000 | 551250 | 578813 | 2155063 |
| | Publish news and article in newspaper | Times | 4 | 300000 | 1200000 | | 300000 | 315000 | 330750 | 347288 | 1293038 |
| | Production of video documentary | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | | | | 7050001 | 6097501 | 6292376 | 6524495 | 6465720 | 32430093 |
| | | | | | | | | | | | |
| | **Special Program** | | | | | | | | | | |
| | **Intoduction of Gharial in Rapti River** | | | | | | | | | | |
| | Feasibility study for introduction of gharial in Rapti river | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Form group of river dependent community for gharial conservation | No | 1 | 200000 | 200000 | 200000 | | | | | 200000 |
| | Conduct awareness programme related to conservation of gharial | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide alternative livelihood opportunities for river dependent communities | No | 8 | 100000 | 800000 | | 200000 | 210000 | 220500 | 231525 | 862025 |
| | Release of captive reared gharial in Rapti river periodically on conservation days | Set | 1 | 250000 | 250000 | 250000 | | | | | 250000 |
| | Periodic monitoring of gharial | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Total | | | | | 650000 | 910000 | 430500 | 452025 | 474626 | 2917151 |
| | | | | | | | | | | | |
| | **Extension of the Park** | | | | | | | | | | |
| | Conduct feasibility study report for the extension of the park | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Facilitate IEE for the extension of park area | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Follow the development of the proposal to study the details of the park extension to prepare the communities in favour of the park extension | Times | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Carry out mass meeting through the local units, CBOs, media interaction about the importance of the park extension and biodiversity conservation | Times | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | Establish the buffer zone boundary in the extended area | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Total | | | | | 900000 | 920000 | 941000 | 463050 | 486203 | 3710253 |
| | | | | | | | | | | | |
| | **Road Kill Management** | | | | | | | | | | |
| | Construct 1 fly over bridge and 1 underpass at strategic locations, in coordination with Department of Road | No | 2 | Budget is too high therefore needs support from conservation partners or external fundings. | | | | | | | |
| | Construct guided fence (Meshwire) along with wildlife zebra crossing at strategic locations | No | 7 | Budget is too high therefore needs support from conservation partners or external fundings. | | | | | | | |
| | Construct guided fence in strategic location in and around Sikta canal | No | 2 | 500000 | 1000000 | | 500000 | 525000 | | | 1025000 |
| | Create and restore waterholes in the northern part of the park | No | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Conduct awareness to drivers and vehicle owners while passing the park area | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Install the CCTV at different strategic locations of the highway | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Plantation of suitable species in the northern part of the park | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Erect hoarding boards and sign boards in accident prone areas | No | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Conduct research to find the scientific way to avail water all season in drier part of the park | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Total | | | | | 1000000 | 1025000 | 1076250 | 578813 | 607753 | 4287816 |
| | | | | | | | | | | | |
| | **Climate Change Adaptation** | | | | | | | | | | |
| | Undertake vulnerability assessments and adaptation planning in coordination with local bodies | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| | Build capacity of local youths as local resource persons or as citizen scientists to use them during monitoring of vulnerable species, ecosystem and habitat | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Introduce new crops varieties as adaptation interventions | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Improve and introduce livestock breeds and strengthen veterinary services partnering with Government and private sectors while also training local cadres of village level livestock health workers | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| | Establish multipurpose community buildings to facilitate local community in the affected areas during flood disasters | No | 1 | 1000000 | 1000000 | | 1000000 | | | | 1000000 |
| | Establish and strengthen community based disaster management committees | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide tools and equipment for disaster risk preparation around the most vulnerable settlements | Set | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| | Renovate/restore wetlands remaining within park area | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Create artificial highlands/ mounds leading to safe areas for wild animals | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Periodic repair and maintenance of community infrastructures such as Jorhatte, Obhari and Sikta irrigation canal | No | 3 | 300000 | 900000 | 300000 | 315000 | 330750 | | | 945750 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reforest degraded, climate vulnerable areas with fast-growing but climate resilient possibly native tree and plant species to create buffer against floods, | ha | 25 | 100000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| | Construct embankment, spur or any soil conservation measure in various rivers and streams to protect park infrastructures, human settlements and wildlife habitats from flood specially around Park head quarter, Paruwa Khola, Rapti River, Duduwa Khola, Babai river banks, Jhijari, Jethinala and Gaukholi | No | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| | Form community-based disaster management committee and link them with climate change and adaptation related institutions to tackle climate-related effects | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Total | | | | | 2900000 | 3520000 | 2646000 | 2431013 | 2552563 | 14049576 |
| | | | | | | | | | | | |
| | **Solid waste management** | | | | | | | | | | |
| | Support to develop proper sanitation infrastructures including drainage, toilets, collection and recycling systems | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Construct a Demonstration center on garbage management in order to demonstrate proper techniques of garbage disposal and recycling techniques to stakeholders | No | 1 | 500000 | 500000 | | 500000 | | | | 500000 |
| | Prepare a common sanitation guideline to make them adopt minimum sanitation standards for hotel, lodge, homestay and restaurant in managing clean front yard, toilet with leak proof septic tanks and waste water soakage pits | No | 1 | 500000 | 500000 | | | 500000 | | | 500000 |
| | Construct new cremation site | No | 2 | 500000 | 1000000 | | | | 500000 | 500000 | 1000000 |
| | Total | | | | | 500000 | 500000 | 500000 | 500000 | 500000 | 2500000 |
| | | | | | | | | | | | |
| | **Livelihood Program for river dependent communities** | | | | | | | | | | |
| | Form river dependent household groups | No | 1 | 50000 | 50000 | 50000 | | | | | 50000 |
| | Construct community fish ponds for them | No | 2 | 100000 | 200000 | | 100000 | | 110000 | | 210000 |
| | Provide support for fish farming and marketing | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | Provide skills for saving and credit scheme and capital mobilization through their cooperative | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |

| S.N | Activities | Unit | No. | Rate | Amount | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Total Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Support and provide training related to smart agriculture | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Provide alternative income generation activities | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | Total | | | | | 400000 | 467500 | 385875 | 515169 | 425427 | 2193971 |

# Annex-IX

## Summary budget of BZUCs

| S.N. | Activities | Year I | Year II | Year III | Year IV | Year V | Total |
|---|---|---|---|---|---|---|---|
| 1 | **Kohalpur BZUC** | | | | | | |
| | Conservation Program | 2605000 | 1947750 | 2574285 | 2703052 | 2838201 | 12668288 |
| | Community Development | 2460000 | 2483000 | 2557150 | 1310008 | 1375508 | 10185665 |
| | Income generation & Skill Development | 800000 | 1132500 | 1381625 | 1247456 | 1340079 | 5901660 |
| | Conservation Education | 300000 | 315000 | 308700 | 324132 | 364336 | 1612168 |
| | Administrative Cost | 284000 | 458200 | 313110 | 328766 | 345204 | 1729279 |
| | **Sub Total** | **6449000** | **6336450** | **7134870** | **5913413** | **6263328** | 32097061 |
| 2 | **Purandhara BZUC** | | | | | | |
| | Conservation Program | 1495000 | 1564500 | 1648237 | 1724858 | 1871870 | 8304465 |
| | Community Development | 1040000 | 1119500 | 3146475 | 1179049 | 2203351 | 8688375 |
| | Income generation & Skill Development | 950000 | 990000 | 1047000 | 1091100 | 972405 | 5050505 |
| | Conservation Education | 320000 | 178500 | 352800 | 173641 | 206630 | 1231571 |
| | Administrative Cost | 284000 | 298200 | 473110 | 328766 | 345204 | 1729279 |
| | **Sub Total** | **4089000** | **4150700** | **6667622** | **4497413** | **5599460** | **25004195** |
| 3 | **Furke Salli BZUC** | | | | | | |
| | Conservation Program | 2330000 | 2446500 | 2679075 | 2813026 | 2953673 | 13222274 |
| | Community Development | 720000 | 956000 | 998800 | 2833490 | 1875165 | 7383455 |
| | Income generation & Skill Development | 850000 | 827500 | 936375 | 746694 | 841028 | 4201597 |
| | Conservation Education | 320000 | 157500 | 187425 | 347284 | 182321 | 1194530 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **4504000** | **4685700** | **5114785** | **7229259** | **6197391** | 27731135 |

| S.N. | Activities | Year I | Year II | Year III | Year IV | Year V | Total |
|---|---|---|---|---|---|---|---|
| 4 | **Hattidamar Ghuiyabari BZUC** | | | | | | |
| | Conservation Program | 2490000 | 1407000 | 1504859 | 2969303 | 1780707 | 10151869 |
| | Community Development | 3180000 | 1289000 | 1300950 | 1420998 | 1434297 | 8625245 |
| | Income generation & Skill Development | 900000 | 780000 | 991500 | 859575 | 729304 | 4260379 |
| | Conservation Education | 200000 | 388500 | 220500 | 426772 | 243096 | 1278868 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **7054000** | **4162700** | **4330919** | **6165413** | **4532608** | **26045640** |
| 5 | **Rajkot BZUC** | | | | | | |
| | Conservation Program | 2425000 | 1758750 | 1846687 | 1939018 | 2029889 | 10449344 |
| | Community Development | 1180000 | 1186500 | 3300825 | 1308116 | 1373522 | 8348963 |
| | Income generation & Skill Development | 1100000 | 780000 | 976500 | 1094575 | 1074304 | 5025379 |
| | Conservation Education | 220000 | 210000 | 385500 | 427772 | 243096 | 1486368 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **5209000** | **4233450** | **6822622** | **5258247** | **5066015** | **27039333** |
| 6 | **Rapti BZUC** | | | | | | |
| | Conservation Program | 2505000 | 2105250 | 2210460 | 3154524 | 2409299 | 12384533 |
| | Community Development | 1320000 | 1756000 | 1343800 | 1448490 | 2875165 | 8743455 |
| | Income generation & Skill Development | 1100000 | 780000 | 976500 | 1094575 | 1074304 | 5025379 |
| | Conservation Education | 250000 | 241500 | 253575 | 289403 | 279561 | 1314039 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **5459000** | **5180950** | **5097445** | **6475758** | **6983532** | **29196685** |
| 7 | **Deurali Haryali BZUC** | | | | | | |
| | Conservation Program | 2975000 | 3249750 | 2207238 | 2207347 | 2154437 | 12793772 |
| | Community Development | 2010000 | 2430500 | 1562025 | 474626 | 618358 | 7095509 |
| | Income generation & Skill Development | 900000 | 625000 | 881250 | 678813 | 967753 | 4052816 |
| | Conservation Education | 280000 | 273000 | 308650 | 300980 | 316026 | 1478656 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |

| S.N. | Activities | Year I | Year II | Year III | Year IV | Year V | Total |
|---|---|---|---|---|---|---|---|
| | **Sub Total** | **6449000** | **6876450** | **5272273** | **4150531** | **4401777** | 27150032 |
| 8 | **Dhakeri BZUC** | | | | | | |
| | Conservation Program | 3310125 | 2215631 | 3649412 | 2390360 | 2637651 | 14203179 |
| | Community Development | 3160000 | 2718000 | 1478900 | 2342845 | 1619987 | 11319732 |
| | Income generation & Skill Development | 1040000 | 1392000 | 1296600 | 1533930 | 1429127 | 6691657 |
| | Conservation Education | 280000 | 273000 | 308700 | 300980 | 339178 | 1501858 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **8074125** | **6896831** | **7046722** | **7056881** | **6371147** | **35445705** |
| 9 | **Madhyabindu BZUC** | | | | | | |
| | Conservation Program | 2825000 | 1706250 | 3109050 | 1881137 | 1969114 | 11490551 |
| | Community Development | 710000 | 1140500 | 1782525 | 1256151 | 2741459 | 8630635 |
| | Income generation & Skill Development | 950000 | 930000 | 1031500 | 1024575 | 1074304 | 5010379 |
| | Conservation Education | 220000 | 210000 | 220500 | 253022 | 243096 | 1105118 |
| | Administrative Cost | 284000 | 298200 | 313110 | 488766 | 345204 | 1729279 |
| | **Sub Total** | **4989000** | **4284950** | **6456685** | **4903651** | **6373176** | **27965962** |
| | **Total** | **52276125** | **46808181** | **53943943** | **51650565** | **51788433** | **257675747** |

# Annex-X

## Bufferzone activities with budget

### Deurali Hariyali BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wiregauge | km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | Group, Committee's operational plan formation/renewal | No | 8 | 50000 | 400000 | 100000 | 105000 | 110250 | 115762 | | 431012 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti- poaching | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 8 | 25000 | 200000 | 50000 | 52500 | 55125 | | 60775 | 218400 |
| 6 | Fireline maintenance | km/year | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Pond construction | No | 3 | 50000 | 150000 | 50000 | 52500 | 55125 | | | 157625 |
| 8 | Pond maintenance | No/year | 7 | 5000 | 35000 | 5000 | 5250 | 5512 | 11299 | 11863 | 38924 |
| 9 | RCC Watch Tower construction | No | 2 | 1000000 | 2000000 | 1000000 | 1050000 | | | | 2050000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Forest Trail construction | km | 8 | 60000 | 480000 | | 126000 | 132300 | 138915 | 145861 | 543076 |
| 11 | Hattisar construction | No | 1 | 5000000 | 5000000 | 1000000 | 1050000 | 1000001 | 1050001 | 1000002 | 5100004 |
| | **Total** | | | | | **2975000** | **3249750** | **2207238** | **2207347** | **2154437** | **12793772** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | 2000000 | | | | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 3 | Road Gravelling | km | 15 | 30000 | 450000 | 90000 | 94500 | 99225 | 104186 | 109396 | 497307 |
| 4 | Bridge maintain | No | 6 | 50000 | 300000 | 100000 | | 110000 | | 120000 | 330000 |
| 5 | Support Drinking water tap and tank | HHs/set | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 6 | Cultural museum | No | 1 | 1500000 | 1500000 | 1500000 | | | | | 1500000 |
| 7 | Welcome gate construction | No | 1 | 1000000 | 1000000 | | | 1000000 | | | 1000000 |
| | **Total** | | | | | **2010000** | **2430500** | **1562025** | **474626** | **618358** | **7095509** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Homestay initiation and support | HH | 5 | 100000 | 500000 | 100000 | | | | | 100000 |
| 2 | Homestay management training | No | 1 | 100000 | 100000 | | 100000 | | | | 100000 |
| 3 | Nature guide training | No | 3 | 300000 | 900000 | 300000 | | 330000 | | 360000 | 990000 |
| 4 | Beauty palour training | Person | 15 | 50000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 5 | Driving training | Event | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Lemon and fruits farming training and support | Event | 1 | 100000 | 100000 | | | | 100000 | | 100000 |
| 7 | Women empowerment training | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 8 | Electronics, Automobile,plumbing and mobile repair training | Person | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | **900000** | **625000** | **881250** | **678813** | **967753** | **4052816** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/ support | No | 2 | 20000 | 40000 | 20000 | | 22000 | | | 42000 |
| 2 | Group educational tour (30 people) | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Conservation education program in school | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 6 | Program broadcasting on TV/Radio | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | **Total** | | | | | **280000** | **273000** | **308650** | **300980** | **316026** | **1478656** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | 80000 | | | | | 80000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | 80000 | | | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **444000** | **298200** | **313110** | **328766** | **345204** | **1729279** |

## Dhakeri BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | Group, Commiittee's operational plan formation/renewal | No | 10 | 50000 | 500000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Years | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 8 | 25000 | 200000 | 50000 | 52500 | 55125 | | 60775 | 218400 |
| 6 | Fireline maintenance | km/year | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Pond construction | No | 6 | 50000 | 52500 | 55125 | 57881 | 60775 | 63813 | 134006 | 371600 |
| 8 | Pond maintenance | No/year | 7 | 5000 | 35000 | 5000 | 5250 | 5512 | 11299 | 11863 | 38924 |
| 9 | View Tower construction | No | 2 | 1200000 | 2400000 | 1200000 | | 1323000 | | | 2523000 |
| 10 | Forest Trail construction | km | 15 | 60000 | 900000 | 180000 | 189000 | 198450 | 208372 | 218790 | 994612 |
| 11 | Hattisar construction | No | 1 | 5000000 | 5000000 | 1000000 | 1050000 | 1102500 | 1157625 | 1215506 | 5525631 |
| | **Total** | | | | | **3310125** | **2215631** | **3649412** | **2390360** | **2637651** | **14203179** |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | 2000000 | | | | | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 25 | 30000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 4 | Bridge repair | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| 5 | Deep water boring construction | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Cultural museum | No | 1 | 1500000 | 1500000 | | 1500000 | | | | 1500000 |
| 7 | Welcome gate construction | No | 1 | 1000000 | 1000000 | | | | 1000000 | | 1000000 |
| 8 | NTFP processing plant(chamomile/mentha) | No | 2 | 200000 | 400000 | | | 200000 | | 210000 | 410000 |
| 9 | Drinking water tap and tank | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69458 | 72930 | 331538 |
| | **Total** | | | | | **3160000** | **2718000** | **1478900** | **2342845** | **1619987** | **11319732** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Homestay initiation and support | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 2 | Homestay management training | Person | 20 | 20000 | 400000 | 80000 | 84000 | 88200 | 92610 | 97241 | 442051 |
| 3 | Improved livestock shed | No | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 4 | NTFP training and seed/plantlet donation (Chamomile/Mentha) | Events | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 5 | Off season farming training | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 6 | Women empowerment training | No | 2 | 150000 | 300000 | | | 150000 | | 165000 | 315000 |
| 7 | Nature guide training | No | 2 | 300000 | 600000 | | 300000 | | 330000 | | 630000 |
| 8 | Beauty palour training and equipment support | Person | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 9 | Training related to driving, electrician, mobile repair, automobile repair and plumbing | Person | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Advanced tailoring training and support | Person | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69458 | 72930 | 331538 |
| | **Total** | | | | | **1040000** | **1392000** | **1296600** | **1533930** | **1429127** | **6691657** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/ support | No | 3 | 20000 | 60000 | 20000 | | 22050 | | 23152 | 65202 |
| 2 | Group/Committee educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 10 | 30000 | 600000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Conservation education program in school (quiz, essay, debate,poster competition, etc) | No | 10 | 30000 | 600000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 6 | Program broadcasting on TV and Radio | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | **Total** | | | | | **280000** | **273000** | **308700** | **300980** | **339178** | **1501858** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | 80000 | | | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | 80000 | | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **458200** | **313110** | **328766** | **345204** | **1729279** |

## Purandhara BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | Solar panel donation | No | 50 | 15000 | 750000 | 150000 | 157500 | 165375 | 173643 | 182325 | 828843 |
| 3 | Group, Commiittee's operational plan formation/ renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 4 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 5 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 6 | Fireline construction | km | 8 | 25000 | 200000 | 50000 | 52500 | 55125 | | 60775 | 218400 |
| 7 | Fireline maintenance | km/year | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 8 | Pond construction | No | 7 | 50000 | 350000 | 50000 | 52500 | 55125 | 115762 | 121550 | 394937 |
| 9 | Pond maintenance | No/year | 2 | 5000 | 10000 | 5000 | | 5512 | | | 10512 |
| 10 | Improved livestock shed | No | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145860 | 663075 |
| 11 | Improved cooking stove | No | 50 | 2000 | 100000 | 100000 | 105000 | 110250 | 115762 | 121548 | 552560 |
| 12 | Biogas construction and donation | No | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | **1495000** | **1564500** | **1648237** | **1724858** | **1871870** | **8304465** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | | 2000000 | | | 2000000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 15 | 30000 | 450000 | 90000 | 94500 | 99225 | 104186 | 109396 | 497307 |
| 4 | Bridge maintain | No | 2 | 50000 | 100000 | 50000 | | 55000 | | | 105000 |
| 5 | Drinking water tap and tank | No | 2 | 30000 | 60000 | | 30000 | | 33000 | | 63000 |
| 6 | School repair/support | No | 1 | 50000 | 50000 | | 50000 | | | | 50000 |
| 7 | Deep water boring construction | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| 8 | Oil Processing Plant (Mustard) | No | 1 | 1000000 | 1000000 | | | | | 1000000 | 1000000 |
| | **Total** | | | | | **1040000** | **1119500** | **3146475** | **1179049** | **2203351** | **8688375** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Hybrid species of goat purchase and donation | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 2 | Bee farming training and support | People | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121551 | 552563 |
| 3 | Piglet purchase and donation | HHs | 10 | 50000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121551 | 552563 |
| 4 | Mustard farming training and support | People | 20 | 50000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 5 | Advance tailoring training and support | People | 20 | 50000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 6 | Women empowerment training | No | 2 | 150000 | 300000 | | 150000 | | 165000 | | 315000 |
| 7 | Mobile, automobile repair, driving, painting, plumbing training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Total** | | | | | **950000** | **990000** | **1047000** | **1091100** | **972405** | **5050505** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/support | No | 4 | 20000 | 80000 | 20000 | 21000 | 22050 | | 24309 | 87359 |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board onstruction | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Account and leadership development training | No | 2 | 150000 | 300000 | 150000 | | 165375 | | | 315375 |
| | **Total** | | | | | **320000** | **178500** | **352800** | **173641** | **206630** | **1231571** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | | 80000 | | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | | 80000 | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214987.5 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16537.5 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **298200** | **473110** | **328766** | **345204** | **1729279** |

## Furke Salli Malai Jaljala BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 30 | 250000 | 7500000 | 1500000 | 1575000 | 1653750 | 1736437 | 1823258 | 8288445 |
| 2 | BZCF operational plan formation/renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Improved livestock shed | No | 50 | 30000 | 1500000 | 300000 | 315000 | 330750 | 347287 | 364651 | 1657688 |
| 6 | Solar Panel purchase and donation | No | 20 | 15000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 7 | Bat habitat conservation and management | Years | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 8 | Fireline construction | km | 10 | 25000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 9 | Fireline maintenance | km/year | 8 | 100000 | 800000 | 100000 | 105000 | 220500 | 231525 | 243101 | 900126 |
| | **Total** | | | | | **2330000** | **2446500** | **2679075** | **2813026** | **2953673** | **13222274** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | | | 2000000 | | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 25 | 30000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 4 | Bridge maintain | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Drinking water tap and tank | No | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 6 | Canal construction | km | 1 | 1000000 | 1000000 | | | | | 1000000 | 1000000 |
| 7 | School repair/fencing | No | 2 | 200000 | 400000 | | 200000 | 205000 | | | 405000 |
| | **Total** | | | | | **720000** | **956000** | **998800** | **2833490** | **1875165** | **7383455** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Hybrid species goat purchase and donation | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 2 | Bee farming training and support | People | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 3 | Off season farming training and support | People | 2 | 100000 | 200000 | | 100000 | | 110000 | | 210000 |
| 4 | NTFP farming training and support (lemon grass) | No | 2 | 150000 | 300000 | | 150000 | | | 172500 | 322500 |
| 5 | Advance tailoring training and support | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 6 | Plumbing, electrician, mobile and automobile training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Women empowerment training | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| | | | | | | **850000** | **827500** | **936375** | **746694** | **841028** | **4201597** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/support | No | 2 | 20000 | 40000 | 20000 | | 22050 | | | 42050 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Account and leadership development training | No | 2 | 150000 | 300000 | 150000 | | | 173643 | | 323643 |
| | | | | | | **320000** | **157500** | **187425** | **347284** | **182321** | **1194530** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | | | 80000 | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | | | 80000 | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **298200** | **313110** | **488766** | **345204** | **1729279** |

## Madhyabindu BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | BZCFs operational plan formation/renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 10 | 25000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 6 | Fireline maintenance | km/year | 20 | 100000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486202 | 2210252 |
| 7 | Pond construction | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 8 | Pond maintenance | No/year | 3 | 5000 | 15000 | 5000 | 5250 | | 5787 | | 16037 |
| 9 | View Tower construction | No | 2 | 1200000 | 2400000 | 1200000 | | 1323000 | | | 2523000 |
| 10 | Plantation | ha | 25 | 100000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| | **Total** | | | | | **2825000** | **1706250** | **3109050** | **1881137** | **1969114** | **11490551** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | | | | 2000000 | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Road Gravelling | km | 15 | 30000 | 450000 | 90000 | 94500 | 99225 | 104186 | 109396 | 497307 |
| 4 | Canal construction | No | 1 | 1000000 | 1000000 | | | | | | 1000000 |
| 5 | Drinking water tap and tank | No | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 6 | School repair/furniture support | No | 2 | 100000 | 200000 | 100000 | | 110000 | | | 210000 |
| 7 | Deep water boring construction | No | 2 | 500000 | 1000000 | | 500000 | | 550000 | | 1050000 |
| 8 | Welcome gate | No | 1 | 1000000 | 1000000 | | | 1000000 | | | 1000000 |
| | **Total** | | | | | **710000** | **1140500** | **1782525** | **1256151** | **2741459** | **8630635** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Homestay initiation and support | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121551 | 552563 |
| 2 | Homestay management training | No | 2 | 200000 | 400000 | 200000 | | 220000 | | | 420000 |
| 3 | Nature guide training | No | 2 | 300000 | 600000 | | 300000 | | 330000 | | 630000 |
| 4 | Beauty palour training | People | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 5 | Advance tailoring training and support | People | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115762.5 | 121551 | 552563 |
| 6 | Off season farming training and support | No | 2 | 150000 | 300000 | 150000 | | | | 180000 | 330000 |
| 7 | Women empowerment training | No | 1 | 150000 | 150000 | | | 150000 | | 165000 | 315000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | Mobile, plumbing, electrician and Automobile repair training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | **Total** | | | | | **950000** | **930000** | **1031500** | **1024575** | **1074304** | **5010379** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/support | No | 2 | 20000 | 40000 | 20000 | | | 21500 | | |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Public information meeting | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | **Total** | | | | | **220000** | **210000** | **220500** | **253022** | **243096** | **1105118** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | | | | 80000 | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | | | | 80000 | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **298200** | **313110** | **328766** | **505204** | **1729279** |

## Hattidamar BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 8 | 250000 | 2000000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | BZCF operational plan formation/renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 8 | 25000 | 200000 | 25000 | 26250 | 55124 | 57880 | 60774 | 225028 |
| 6 | Fireline maintenance | km/year | 6 | 100000 | 600000 | 100000 | 105000 | 110250 | 115762 | 243100 | 674112 |
| 7 | Pond construction | No | 4 | 50000 | 200000 | | 52500 | 55125 | 57881 | 60775 | 226281 |
| 8 | Pond maintenance | No/year | 5 | 5000 | 25000 | 5000 | 5250 | 5460 | 5787 | 6076 | 27573 |
| 9 | View Tower construction | No | 2 | 1200000 | 2400000 | 1200000 | | | 1389150 | | 2589150 |
| 10 | Improved livestock shed | No | 80 | 30000 | 2400000 | 480000 | 504000 | 529200 | 555660 | 583443 | 2652303 |
| 11 | Solar Panel purchase and donation | No | 20 | 15000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| | | | | | | **2490000** | **1407000** | **1504859** | **2969303** | **1780707** | **10151869** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | 2000000 | | | | | 2000000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 4 | Bridge maintain | No | 2 | 50000 | 100000 | | 50000 | | 55000 | | 105000 |
| 5 | Deep water boring construction | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| 6 | Drinking water tap and tank support | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69458 | 72930 | 331538 |
| 7 | School repair/furniture support | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| | | | | | | **3180000** | **1289000** | **1300950** | **1420998** | **1434297** | **8625245** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Homestay initiation and support | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 2 | Homestay management training | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 3 | Off season farming training and support | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 4 | Hybrid goat species purchase and donation | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 5 | Lemon farming training and support | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Women empowerment training | No | 2 | 150000 | 300000 | | 150000 | | 165000 | | 315000 |
| **7** | **Mobile,plumbing, electrician and Automobile repair training** | **People** | **50** | **20000** | **1000000** | **200000** | **210000** | **220500** | **231525** | **243101** | **1105126** |
| | | | | | | **900000** | **780000** | **991500** | **859575** | **729304** | **4260379** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/ support | No | 2 | 20000 | 40000 | | 21000 | | 22000 | | 43000 |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 271536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 135767 |
| 4 | Hoading board construction | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 135767 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 135767 |
| 6 | Public information meeting | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 226281 |
| 7 | Account and leadership development training | No | 2 | 150000 | 300000 | | 157500 | | 173250 | | 330750 |
| | | | | | | **200000** | **388500** | **220500** | **426772** | **243096** | **1278868** |
| | | | | | | | | | | | |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | 80000 | | | | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | 80000 | | | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **444000** | **298200** | **313110** | **328766** | **345204** | **1729279** |

## Kohalpur BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 10 | 250000 | 6000000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| 2 | Group, Commiittee's operational plan formation/ renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 8 | 25000 | 200000 | 50000 | 525000 | 551250 | 578812 | 607752 | 2312814 |
| 6 | Fireline maintenance | km/year | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Pond construction | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 8 | Pond maintenance | No/year | 5 | 5000 | 25000 | 5000 | 5250 | 5460 | 5787 | 6076 | 27573 |
| 9 | Forest Trail construction | km | 8 | 480000 | 3840000 | 480000 | 504000 | 1058400 | 1111320 | 1166886 | 4320606 |
| 10 | View tower construction | No | 1 | 1200000 | 1200000 | 1200000 | | | | | 1200000 |
| | | | | | | **2605000** | **1947750** | **2574285** | **2703052** | **2838201** | **12668288** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | 2000000 | | | | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69458 | 72930 | 331538 |
| 4 | Playground management | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Vegetable collection/ storage depot | No | 1 | 1500000 | 1500000 | | | 1500000 | | | 1500000 |
| 6 | Deep water boring construction | No | 4 | 500000 | 2000000 | 500000 | | 550000 | 577500 | 606375 | 2233875 |
| 7 | Welcome gate construction | No | 1 | 1000000 | 1000000 | 1000000 | | | | | 1000000 |
| 8 | School furniture support | No | 4 | 100000 | 400000 | | | | 200000 | 210000 | 410000 |
| | | | | | | **2460000** | **2483000** | **2557150** | **1310008** | **1375508** | **10185665** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Homestay initiation and support | No | 5 | 100000 | 500000 | 100000 | 105000 | 110250 | 115763 | 121551 | 552563 |
| 2 | Homestay management training | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 3 | Nature guide training | No | 2 | 300000 | 600000 | | 300000 | | 330000 | | 630000 |
| 4 | Off season farming training and support | No | 5 | 150000 | 750000 | 150000 | 157500 | 165375 | 173644 | 182326 | 828845 |
| 5 | Duna tapari (leaves cup plate) machine purchase and donation | No | 2 | 500000 | 1000000 | | | 500000 | | 550000 | 1050000 |
| 6 | Lemon farming training and support | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Women empowerment training | No | 2 | 150000 | 300000 | | 150000 | | 165000 | | 315000 |
| 8 | Mobile,plumbing, electrician and Automobile repair training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | | | | | | **800000** | **1132500** | **1381625** | **1247456** | **1340079** | **5901660** |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/support | No | 3 | 20000 | 60000 | 20000 | 21000 | | | 24000 | 65000 |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Program broadcasting on TV and Radio | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 7 | Public information meeting | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | | | | | | **300000** | **315000** | **308700** | **324132** | **364336** | **1612168** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | 80000 | | | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | 80000 | | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **458200** | **313110** | **328766** | **345204** | **1729279** |

## Rajkot BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | BZCF operational plan formation/renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | km | 8 | 25000 | 200000 | 50000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 6 | Fireline maintenance | km/year | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Pond construction | No | 6 | 50000 | 300000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 8 | Pond maintenance | No/year | 4 | 5000 | 20000 | 5000 | 5250 | 5512 | 5787 | | 21549 |
| 9 | View Tower construction | No | 1 | 1200000 | 1200000 | 1200000 | | | | | 1200000 |
| 10 | Improved livestock shed | No | 50 | 30000 | 1500000 | 300000 | 315000 | 330750 | 347287 | 364651 | 1657688 |
| | | | | | | **2425000** | **1758750** | **1846687** | **1939018** | **2029889** | **10449344** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | | 2000000 | | | 2000000 |
| 2 | Road construction | km | 10 | 200000 | 2000000 | 400000 | 420000 | 441000 | 463050 | 486203 | 2210253 |
| 3 | Road Gravelling | km | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 4 | Bridge construction/repair | No | 2 | 50000 | 100000 | 50000 | | 55000 | | | 105000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Drinking water tap and tank | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69458 | 72930 | 331538 |
| 6 | Deep water boring construction | No | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578813 | 607753 | 2762816 |
| 7 | School furniture support | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276282 |
| | | | | | | **1180000** | **1186500** | **3300825** | **1308116** | **1373522** | **8348963** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Hybrid goat species purchase and donation | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 2 | Poultry farming training and support | No | 2 | 150000 | 300000 | | 150000 | | 165000 | | 315000 |
| 3 | Off season farming training and support | No | 2 | 150000 | 300000 | | | 150000 | | 165000 | 315000 |
| 4 | Handicraft training and support | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 5 | Beauty palour training and support | No | 2 | 200000 | 400000 | 200000 | | | 235000 | | 435000 |
| 6 | Piglets purchase and donation | No | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Women empowerment training | No | 2 | 150000 | 300000 | 150000 | | | | 180000 | 330000 |
| 8 | Mobile, plumbing, electrician and Automobile repair training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | | | | | | **1100000** | **780000** | **976500** | **1094575** | **1074304** | **5025379** |
| | | | | | | | | | | | |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/ support | No | 2 | 20000 | 40000 | 20000 | | | 23000 | | 43000 |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Public information meeting | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 7 | Account and leadership development training | No | 2 | 150000 | 300000 | | | 165000 | 173250 | | 338250 |
| | | | | | | **220000** | **210000** | **385500** | **427772** | **243096** | **1486368** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | | 80000 | | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | | 80000 | | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225736.875 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **298200** | **473110** | **328766** | **345204** | **1729279** |

## Rapti BZUC

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **Conservation Program** | | | | | | | | | | |
| 1 | Fencing including wireguage | Km | 10 | 250000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| 2 | BZCF operational plan formation/renewal | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 3 | Forest guard motivation (uniform, raincoat, recharge, torchlight and accessories purchase) | No | 5 | 10000 | 50000 | 10000 | 10500 | 11025 | 11576 | 12154 | 55255 |
| 4 | Youth involvement for anti-theft program | Times | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Fireline construction | Km | 10 | 25000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 6 | Fireline maintenance | km/year | 15 | 100000 | 1500000 | 300000 | 315000 | 330750 | 347287 | 364651 | 1657688 |
| 7 | Pond construction | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| 8 | Pond maintenance | No/year | 5 | 5000 | 25000 | 5000 | 5250 | 5460 | 5787 | 6076 | 27573 |
| 9 | View Tower construction | No | 1 | 1200000 | 1200000 | | | | 1389150 | | 1389150 |
| 10 | Crocodile conservation and management | No | 1 | 500000 | 500000 | 500000 | | | | | 500000 |
| 11 | Forest trail construction | Km | 4 | 480000 | 1920000 | 480000 | 504000 | 529200 | | 555660 | 2068860 |
| 12 | Plantation | Ha | 5 | 500000 | 2500000 | 500000 | 525000 | 551250 | 578812 | 607752 | 2762814 |
| | | | | | | **2505000** | **2105250** | **2210460** | **3154524** | **2409299** | **12384533** |
| | | | | | | | | | | | |
| **B** | **Community Development** | | | | | | | | | | |
| 1 | UC Building construction | No | 1 | 2000000 | 2000000 | | | | | 2000000 | 2000000 |
| 2 | Road construction | Km | 15 | 200000 | 3000000 | 600000 | 630000 | 661500 | 694575 | 729304 | 3315379 |
| 3 | Road Gravelling | Km | 20 | 30000 | 600000 | 120000 | 126000 | 132300 | 138915 | 145861 | 663076 |
| 4 | Canal construction | Km | 1 | 1000000 | 1000000 | | 1000000 | | | | 1000000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Drinking water tap and tank | No | 10 | 30000 | 300000 | | | | | | 0 |
| 6 | Deep water boring construction | No | 2 | 500000 | 1000000 | 500000 | | 550000 | | | 1050000 |
| 7 | School repair/furniture support | No | 4 | 50000 | 200000 | 100000 | | | 115000 | | 215000 |
| 8 | Telephone tower for communication | No | 1 | 500000 | 500000 | | | | 500000 | | 500000 |
| | | | | | | **1320000** | **1756000** | **1343800** | **1448490** | **2875165** | **8743455** |
| | | | | | | | | | | | |
| **C** | **Income generation and skill development** | | | | | | | | | | |
| 1 | Hybrid goat species purchase and donation | No | 2 | 150000 | 300000 | 150000 | | 165000 | | | 315000 |
| 2 | Poultry farming training and support | No | 2 | 150000 | 300000 | | 150000 | | 165000 | | 315000 |
| 3 | Off season farming training and support | No | 2 | 150000 | 300000 | | | 150000 | | 165000 | 315000 |
| 4 | Handicraft training and support | No | 5 | 200000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 5 | Beauty palour training and support | No | 2 | 200000 | 400000 | 200000 | | | 235000 | | 435000 |
| 6 | Piglets purchase and donation | No | 10 | 100000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| 7 | Women empowerment training | No | 2 | 150000 | 300000 | 150000 | | | | 180000 | 330000 |

| S.N. | Activities | Unit | Quantity | Rate | Amount | Year I | Year II | Year III | Year IV | Year V | Total amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | Mobile, plumbing, electrician and Automobile repair training | People | 50 | 20000 | 1000000 | 200000 | 210000 | 220500 | 231525 | 243101 | 1105126 |
| | | | | | | **1100000** | **780000** | **976500** | **1094575** | **1074304** | **5025379** |
| | | | | | | | | | | | |
| **D** | **Conservation Education** | | | | | | | | | | |
| 1 | Eco club formation/support | No | 2 | 20000 | 40000 | 20000 | | | 23152 | | 43152 |
| 2 | Group educational tour | No | 5 | 60000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 3 | Celebration day program | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 4 | Hoading board construction | No | 10 | 30000 | 300000 | 60000 | 63000 | 66150 | 69457 | 72929 | 331536 |
| 5 | Conservation education program in school | No | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34728 | 36464 | 165767 |
| 6 | Public information meeting | No | 5 | 50000 | 250000 | 50000 | 52500 | 55125 | 57881 | 60775 | 276281 |
| | | | | | | **250000** | **241500** | **253575** | **289403** | **279561** | **1314039** |
| | | | | | | | | | | | |
| **E** | **Administrative Costs** | | | | | | | | | | |
| 1 | Five years operational plan preparation | Times | 1 | 80000 | 80000 | | | | 80000 | | 80000 |
| 2 | Group/Committee reformation | Times | 1 | 80000 | 80000 | | | | 80000 | | 80000 |
| 3 | Tea and snacks cost | Years | 5 | 24000 | 120000 | 24000 | 25200 | 26460 | 27783 | 29172 | 132615 |
| 4 | Stationary | Years | 5 | 30000 | 150000 | 30000 | 31500 | 33075 | 34729 | 36465 | 165769 |
| 5 | Office assistant wage | Years | 5 | 195000 | 975000 | 195000 | 204750 | 214988 | 225737 | 237024 | 1077498 |
| 6 | Financial audit | Years | 5 | 20000 | 100000 | 20000 | 21000 | 22050 | 23153 | 24310 | 110513 |
| 7 | Communication expenses | Years | 5 | 15000 | 75000 | 15000 | 15750 | 16538 | 17364 | 18233 | 82884 |
| | **Total** | | | | | **284000** | **298200** | **313110** | **488766** | **345204** | **1729279** |

# Annex-XI

## Allowable volume extraction of sand, gravel and boulder of different streams

| SN | Name | Length (m) | Width (m) | | | Averaging Width (m) | depth (M) | | | Avg Depth (m) | Total Volume($m^3$) | Allowable Amount ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | W1 | W2 | W3 | | D1 | D2 | D3 | | | |
| 1 | Shiva khola | 650 | 20.00 | 25.00 | 15.00 | 20.00 | 0.18 | 0.28 | 0.46 | 0.31 | 3987 | 1993 |
| 2 | Bharle | 860 | 95.00 | 45.00 | 62.00 | 67.33 | 0.62 | 0.65 | 0.70 | 0.66 | 38025 | 19013 |
| 3 | Gothekhola | 365 | 28.00 | 15.00 | 42.00 | 28.33 | 0.61 | 0.58 | 0.70 | 0.63 | 6515 | 3258 |
| 4 | Tilkanya | 1238 | 40.00 | 60.00 | 45.00 | 48.33 | 0.55 | 0.21 | 0.38 | 0.38 | 22738 | 11369 |
| 5 | OjKhola | 1450 | 25.00 | 50.00 | 85.00 | 53.33 | 0.39 | 0.46 | 0.52 | 0.46 | 35316 | 17658 |
| 6 | Dopariya Khola | 1120 | 30.00 | 60.00 | 25.00 | 38.33 | 0.59 | 0.58 | 0.68 | 0.62 | 26476 | 13238 |
| 7 | Rani Gajuri | 526 | 5.00 | 10.00 | 12.00 | 9.00 | 0.23 | 0.31 | 0.42 | 0.32 | 1515 | 757 |
| 8 | Bairiya khola | 1202 | 32.00 | 50.00 | 40.00 | 40.67 | 0.73 | 0.68 | 0.55 | 0.65 | 31936 | 15968 |
| 9 | Sauri | 2527 | 70.00 | 200.00 | 60.00 | 110.00 | 0.88 | 0.98 | 0.93 | 0.93 | 258512 | 129256 |
| 10 | khoche khola | 300 | 100.00 | 50.00 | 22.00 | 57.33 | 0.23 | 0.33 | 0.22 | 0.26 | 4472 | 2236 |
| 11 | kaale Khola | 4550 | 5.00 | 40.00 | 20.00 | 21.67 | 0.76 | 0.88 | 0.93 | 0.86 | 84453 | 42227 |
| 12 | Gabhar Khola | 2150 | 105.00 | 90.00 | 185.00 | 126.67 | 0.75 | 1.20 | 0.90 | 0.95 | 258717 | 129358 |
| 13 | Bhatti Khola | 1030 | 20.00 | 50.00 | 28.00 | 32.67 | 0.55 | 0.68 | 0.88 | 0.70 | 23665 | 11832 |
| 14 | Lumba Khola | 1020 | 90.00 | 125.00 | 130.00 | 115.00 | 0.90 | 1.20 | 0.75 | 0.95 | 111435 | 55718 |
| 15 | Thin Khola | 500 | 30.00 | 45.00 | 18.00 | 31.00 | 0.12 | 0.32 | 0.28 | 0.24 | 3720 | 1860 |
| 16 | Jhuri Khola | 1200 | 65.00 | 80.00 | 75.00 | 73.33 | 0.58 | 0.76 | 0.68 | 0.67 | 59253 | 29627 |
| 17 | Gandeli | 450 | 70.00 | 50.00 | 30.00 | 50.00 | 0.28 | 0.11 | 0.33 | 0.24 | 5400 | 2700 |
| 18 | Sukhar | 1450 | 115.00 | 60.00 | 100.00 | 91.67 | 0.75 | 0.63 | 0.58 | 0.65 | 86839 | 43419 |
| 19 | Paruwa Khola | 2780 | 45.00 | 105.00 | 50.00 | 66.67 | 0.69 | 0.98 | 0.98 | 0.88 | 163711 | 81856 |
| 20 | Baghesal | 1680 | 45.00 | 50.00 | 25.00 | 40.00 | 0.73 | 0.85 | 0.66 | 0.75 | 50176 | 25088 |

| SN | Name | Length (m) | Width (m) | | | Averaging Width (m) | depth (M) | | | Avg Depth (m) | Total Volume($m^3$) | Allowable Amount ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | W1 | W2 | W3 | | D1 | D2 | D3 | | | |
| 21 | Jhijhari | 7150 | 80.00 | 75.00 | 70.00 | 75.00 | 0.75 | 1.10 | 0.96 | 0.94 | 502288 | 251144 |
| 22 | Rohini Khola | 5500 | 25.00 | 12.00 | 17.00 | 18.00 | 0.85 | 1.08 | 0.79 | 0.91 | 89760 | 44880 |
| 23 | Duduwa | 7500 | 79.00 | 45.00 | 76.00 | 66.67 | 0.56 | 0.75 | 0.80 | 0.70 | 351667 | 175833 |
| 24 | Ranighat | 1600 | 85 | 70 | 50 | 68.33 | 0.78 | 0.95 | 0.8 | 0.84 | 92204 | 46102 |
| 25 | Tharubas | 1850 | 50 | 35 | 45 | 43.33 | 0.75 | 1.25 | 0.95 | 0.98 | 78831 | 39415 |
| 26 | Syalmare | 2100 | 30 | 35 | 35 | 33.33 | 0.8 | 0.9 | 0.75 | 0.82 | 57167 | 28583 |
| 27 | Karauti | 2500 | 60 | 30 | 45 | 45 | 0.98 | 0.7 | 0.78 | 0.82 | 92250 | 46125 |
| 28 | Jethinala | 6500 | 20 | 30 | 55 | 35 | 0.9 | 0.9 | 0.96 | 0.92 | 209300 | 104650 |
| 29 | Malai Jaljale | 12000 | 50 | 65 | 65 | 60 | 0.9 | 0.5 | 0.9 | 0.77 | 552000 | 276000 |
| 30 | Duduwa | 1500 | 80 | 40 | 60 | 60 | 1 | 0.25 | 0.25 | 0.5 | 45000 | 22500 |
| 31 | Banseri Banskhola | 800 | 25 | 40 | 25 | 30 | 0.75 | 0.5 | 0.25 | 0.5 | 12000 | 6000 |
| 32 | DudhKholi | 900 | 40 | 80 | 60 | 60 | 0.5 | 0.25 | 0.75 | 0.5 | 27000 | 13500 |
| 33 | Rapti river | 15000 | 80 | 100 | 90 | 90 | 0.6 | 0.75 | 0.75 | 0.7 | 945000 | 472500 |
| 34 | Babai river | 10000 | 40 | 60 | 80 | 60 | 0.75 | 0.5 | 0.25 | 0.5 | 300000 | 150000 |
| | **Total** | | | | | | | | | | **4631326** | **2315663** |

# Annex-XII

## Traditional use right of way, canal going through park and cultural sites

### XIIA: Right of way that is used as traditional use right foot trail

| S.N. | Description | Remarks |
|---|---|---|
| 1 | Thuriya- Amilabari- Hattidamar | Foot trail |
| 2 | Thuriya- Amilabari-Jila | Foot trail |
| 3 | Aagaiya- Deurali- Jaljala | Foot trail |
| 4 | Khadkabar- Aambas- Ghuiyabari | Foot trail and proposed motor road |

### XIIB: Irrigation Canal that goes through core area and BZ

| S.N. | Canal | Location |
|---|---|---|
| 1 | Obhari Farmer canal | Rapti Sonari 8, Banke |
| 2 | Hattigauda Chyama (Large) canal | Baijanath 1, Banke |
| 3 | Kakawa canal | Baijanath 1, Banke |
| 4 | Aamkholi Khadkabar canal | Koholpur 13, Banke |
| 5 | Jorhattey Dauna canal | Koholpur 13, Banke |
| 6 | Jhijhari Bageysal, Uddyan canal | Rapti Sonari 9, Banke |
| 7 | Jhijhari Mahadev village canal | Rapti Sonari 9, Banke |
| 8 | Paruwa river Perani canal | Rapti Sonari 8, Banke |
| 9 | Lumba river sikta Gotheri canal | Rapti Sonari 1, Banke |
| 10 | Lamitaal Bairiya canal | Rapti Sonari 1, Banke |
| 11 | Katseni Aagaiya drinking water | Rapti Sonari 2, Banke |
| 12 | Kukurgauda kusum drinking water | Rapti Sonari 1, Banke |
| 13 | Rajawas kusum drinking water | Rapti Sonari 1, Banke |
| 14 | Shiv river drinking water | Rapti Sonari 1, Banke |

### XIIC: Religious cultural sites of the Park

| S.N. | Religious/cultural sites | Place |
|---|---|---|
| 1 | Deuti Bajai temple | Deurali Dada |
| 2 | Jhakri temple | Jhijhari Chure |
| 3 | Kukurgauda | Way to Dang from Kusum |

# Annex-XIII

## Strategic location for infrastucture devlopment in East-west highway

| Strategic locations for overpass, mesh wire fencing, underpass and wildlife-zebra crossing | | | | | |
|---|---|---|---|---|---|
| **SN** | **From** | | **To** | | **Remarks** |
| | **X** | **Y** | **X** | **Y** | |
| 1 | 593963 | 3103044 | 593035 | 3104023 | Jhuri Khola to Gandeli Fireline (Overpass location) |
| 2 | 590109 | 3105472 | 586741 | 3112683 | Khairi Post to Muguwa Khola (Meshwire fencing) gap in firelines |
| 3 | 592118 | 3104021 | | | Underpass at Sukharo Bridge |

| Wildlife- zebra crossing points | | | |
|---|---|---|---|
| **SN** | **X** | **Y** | **Remarks** |
| 1 | 593715 | 3103315 | Fireline near Jhuri Khola |
| 2 | 589952 | 3105843 | Fireline (Khairi Grassland way) |
| 3 | 588418 | 3109576 | Fireline no 5 |
| 4 | 587351 | 3112182 | Fireline no 4 |
| 5 | 586434 | 3112847 | Fireline no 3 |
| 6 | 582840 | 3111909 | Fireline no 2 |
| 7 | 581612 | 3111528 | Fireline no 1 |

# Annex-XIV

## Details of Participants in different meetings

### 1) 2078 Paush 15 : Meeting with BaNP Staff including management plan expert

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Shyam Kumar Shah | CCO | BaNP |
| 2 | Bishnu Prasad Thapliya | Head | ZSL, Kohalpur |
| 3 | Arjun Bhusal | ACO | BaNP |
| 4 | Uttam Chaudhary | ACO | BaNP |
| 5 | Kun Narayan Chaudhary | ACO | BaNP |
| 6 | Binita K.C. | Ranger | BaNP |
| 7 | Deurupa Pariyar | Ranger | BaNP |
| 8 | Chuman Thakur | Ranger | BaNP |
| 9 | Anish K.C. | Ranger | BaNP |
| 10 | Binita K.C. | Ranger | BaNP |
| 11 | Yam Bahadur Rawat | Ranger | BaNP |
| 12 | Sher Bahadur Thapa | Ranger | BaNP |
| 13 | Sunita Mahatara | Ranger | BaNP |
| 14 | Raju B.K. | Senior Game Scout | BaNP |
| 15 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |
| 16 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 17 | Dinesh Bhandari | Consultant | WNLDA Pvt. Limited |
| 18 | Vikas Bist | Consultant | WNLDA Pvt. Limited |

### 2) 2078//9/13 Rapti BZUC

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Bal Bahadur Gharti | Chairperson | UC |
| 2 | Bhim Lal Dangi | Vice- Chairperson | UC |
| 3 | Thaman Bahadur Bhandari | Treasurer | UC |
| 4 | Lok Bahadur Khadka | Member | UC |
| 5 | Arjun Bhusal | ACO | BaNP |
| 6 | Anish K.C. | Ranger | BaNP |
| 7 | Yam Bahadur Yawat | Ranger | BaNP |
| 8 | Bijula Bhusal | Member | UC |
| 9 | Purnima Giri | Senior Game Scout | BaNP |
| 10 | Uttam Khadka | Game Scout | BaNP |
| 11 | Manisha Chalaune | Game Scout | BaNP |
| 12 | Jhakka Prasad Bhatta | Game Scout | BaNP |
| 13 | Yubaraj Regmi | Team leader | WNLDA Pvt. Limited |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 14 | Dinesh Bhandari | Consultant | WNLDA Pvt. Limited |
| 15 | Vikas Bist | Consultant | WNLDA Pvt. Limited |

**4) 2078 Paush 14 Kohalpur BZUC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Savitra Pun | Chairperson | UC |
| 2 | Nanab Shahi | Member | UC |
| 3 | Om Prakash Oli | Chairperson | Ward |
| 4 | Khadak Prasad Oli | Member | UC |
| 5 | Chitra Bahadur Malla | Treasurer | UC |
| 6 | Giri Raj Poudel | Member | UC |
| 7 | Dohana Pariyar | Secretary | UC |
| 8 | Sher Bahadur Khadka | Member | UC |
| 9 | Rim Bahadur Khatri | Vice Chairperson | UC |
| 10 | Yam Bahadur Rawat | Ranger | BaNP |
| 11 | Yubaraj Regmi | Team leader | WNLDA Pvt. Limited |
| 12 | Dinesh Bhandari | Consultant | WNLDA Pvt. Limited |
| 13 | Vikas Bist | Consultant | WNLDA Pvt. Limited |
| 14 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 15 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

**6) 2078/09/19 Purandhara BZUC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Pokar Singh Budathoki | Chairperson | UC |
| 2 | Tek Bahadur Pun | Member | UC |
| 3 | Thak Lal B.K. | Member | UC |
| 4 | Dil Bahadur Gharti | Member | UC |
| 5 | Pokhar Pun | Member | UC |
| 6 | Chamfa Reule | Member | UC |
| 7 | Uma Pun | Member | UC |
| 8 | Jaya Devi Buda | Member | UC |
| 9 | Rupi Reule | Member | UC |
| 10 | Siriya Budara | Member | UC |
| 11 | Rat Bahadur Pun | Member | UC |
| 12 | Min Bahadur B.K. | Member | UC |
| 13 | Ram Bahadur Reule | Member | UC |
| 14 | Kali Bahadur Bhote | Member | UC |
| 15 | Karna Bahadur Pun | Member | UC |
| 16 | Gagan Singh Reule | Member | UC |
| 17 | Man Bahadur Kuwar | Member | UC |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 18 | Kewal Singh Budathoki | Member | UC |
| 18 | Ram Singh Buda | Member | UC |
| 20 | Ratna Pun Magar | Member | UC |
| 21 | Yam Bahadur Rawat | Ranger | BaNP |
| 22 | Bishal Thapa Magar | Senior Game Scout | BaNP |
| 23 | Prem Kathayat | Game Scout | BaNP |
| 24 | Prem Raj Pandey | Nepal Army | Arjun Barack |
| 25 | Sudeep Chanyal | Nepal Army | Arjun Barack |
| 26 | Deep Kumar Bohara | Member | UC |
| 27 | Khusi Ram Tharu | Driver | BaNP |
| 28 | Vikas Bist | Consultant | WNLDA Pvt. Limited |
| 29 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 30 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

**8) 2078/09/14 Deurali Haryali BZUC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Krishna Chaudhary | Chairperson | UC |
| 2 | Krishna Lal Chaudhary | Chairperson | CBAPU Network |
| 3 | Dhan Maya Bist | Chairperson | Jethi Tola BZUG |
| 4 | Ishwori Bist | Chairperson | Muktinagar BZUG |
| 5 | Yam Bahadur Rawat | Ranger | BaNP |
| 6 | Yubaraj Regmi | Team leader | WNLDA Pvt. Limited |
| 7 | Dinesh Bhandari | Consultant | WNLDA Pvt. Limited |
| 8 | Vikas Bist | Consultant | WNLDA Pvt. Limited |
| 9 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 10 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

**10) 2079/03/15 Draft sharing meeting at DNPWC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Dr. Ram Chandra Kandel | DG | DNPWC |
| 2 | Bed Kumar Dhakal | DDG | DNPWC |
| 3 | Ajay Karki | DDG | DNPWC |
| 4 | Ganesh Pant | Ecologists | DNPWC |
| 5 | Dil Bahadur Purja Pun | Management Officer | DNPWC |
| 6 | Ashok Bhandari | Management Officer | DNPWC |
| 7 | Chandrashekher Chaudhary | Monitoring and Evaluation Officer | DNPWC |
| 8 | Sushma Rana | CO | DNPWC |
| 9 | Rupak Maharjan | Assiatant Management Officer | DNPWC |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 10 | Gopal Khanal | Assiatant Management Officer | DNPWC |
| 11 | Biju Poudel | Ranger | DNPWC |
| 12 | Shyam Kumar Shah | CCO | BaNP |
| 13 | Yubaraj Regmi | Team Leader | WNLDA Pvt. Limited |
| 14 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

**11) 2078/09/16 Dhakeri UC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Pal Bahadur Khatri | Chairperson | UC |
| 2 | Sita Kumari Oli | Secretary | UC |
| 3 | Hem Bahadur Khadka | Co-Secretary | UC |
| 4 | Bhagrathi Khadka | Treasurer | UC |
| 5 | Man Bahadur | Vice Chairperson | UC |
| 6 | Dari Man K.C. | Member | UC |
| 7 | Buddhi Raj Tharu | Member | UC |
| 8 | Jayakala Khadka | Member | UC |
| 9 | Mahabir Khadka | Member | UC |
| 10 | Jag Bir Oli | Forest guard | UC |
| 11 | Bel Bahadur Khadka | Member | UC |
| 12 | Bir Bahadur Oli | Member | UC |
| 13 | Damula Karki | Member | UC |
| 14 | Pupi Bahadur | Member | UC |
| 15 | Kabita Poudel | Member | UC |
| 16 | Yam Bahadur Rawat | Ranger | BaNP |
| 17 | Yubaraj Regmi | Team Leader | WNLDA Pvt. Limited |
| 18 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |
| 19 | Dinesh Bhandari | Consultant | WNLDA Pvt. Limited |
| 20 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 21 | Vikas Bist | Consultant | WNLDA Pvt. Limited |

**13) 2078/09/17 Hattidamar Ghuiyabari BZUC**

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Damar Pun | Chairperson | UC |
| 2 | Devi Rana | Vice Chairperson | UC |
| 3 | Khagendra Badiyal | Secretary | UC |
| 4 | Man Bahadur Tharu | Treasurer | UC |
| 5 | Tilak Rana | Member | UC |
| 6 | Mima B.K. | Member | UC |
| 7 | Ram Bahadur Buda | Member | UC |
| 8 | Prem Dev Giri | Teacher | Shardha School |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 9 | Ralo Basnet | Member | UC |
| 10 | Arjun Buda | Member | UC |
| 11 | Rup Bahadur Silani | Member | UC |
| 12 | Chida Bahadur Gamjali | Member | UC |
| 13 | Lalit Khijali | Member | UC |
| 14 | Ajay Pun Magar | Member | UC |
| 15 | Jiwan Thapa | Member | UC |
| 16 | Guman Dharti Magar | Member | UC |
| 17 | Lok Bahadur Pun | Member | UC |
| 18 | Ganga Buda | Member | UC |
| 19 | Yam Bahadur Rawat | Ranger | BaNP |
| 20 | Khusi Ram Tharu | Driver | BaNP |
| 21 | Bikash Bist | Consultant | WNLDA Pvt. Limited |
| 22 | Nabin Raj Joshi | Consultant | WNLDA Pvt. Limited |
| 23 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

### 15) 2078/09/18 Phurke Salli Malai Jaljala BZUC

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Ghambar Bahadur Gharti | Chairperson | UC |
| 2 | Khumanand Khatri | Member | UC |
| 3 | Remant Khatri | Member | UC |
| 4 | Khadak Bahadur B.K. | Member | UC |
| 5 | Moti Oli | Member | UC |
| 6 | Bir Bahadur Gharti | Member | UC |
| 7 | Tika Ram Khatri | Member | UC |
| 8 | Sashi Ram Pun | Member | UC |
| 9 | Dil Kumari Gharti | Member | UC |
| 10 | Dev Raj Basnet | Member | UC |
| 11 | Yam Bahadur Rawat | Ranger | BaNP |
| 12 | Chet Bahadur Khadka | Senior Game Scout | BaNP |
| 13 | Khusi Ram Tharu | Driver | BaNP |
| 14 | Vikas Bist | Consultant | WNLDA Pvt. Limited |

### 16) 2078/12/28 District Level Consultation

| SN | Name | Designation | Organization |
|---|---|---|---|
| 1 | Shyam Kumar Shah | CCO | BaNP |
| 2 | Ashok Khadka | Head | Arjuni Barrack |
| 3 | Gahendra Kumar Khadka | Chairperson | BZMC |
| 4 | Kali Bahadur Singh | Chairperson | Baijnath Rural Municipality, Ward no 4 |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 5 | Roop Bahadur Malla | Chairperson | Baijnath Rural Municipality, Ward no 1 |
| 6 | Karna B.C. | Chairperson | Kohalpur Urban Municipality, Ward no 2 |
| 7 | Nain Bahadur Shahi | Chairperson | Kohalpur Urban Municipality, Ward no 12 |
| 8 | Om Bahaur Oli | Chairperson | Kohalpur Urban Municipality, Ward no 13 |
| 9 | Chandra Bahadur Oli | Chairperson | Rapti Sunari Rural Municipality, Ward no 1 |
| 10 | Khum Bahadur Basnet | Chairperson | Rapti Sunari Rural Municipality, Ward no 8 |
| 11 | Mahabir Oli | Chairperson | Rapti Sunari Rural Municipality, Ward no 9 |
| 12 | Arjun Bhusal | ACO | BaNP |
| 13 | Uttam Kumar Chaudhary | ACO | BaNP |
| 14 | Tek Bahadur Nepali | AFO | Divisional Forest Office, Banke |
| 15 | Krishna Bahadur Chaudhary | Chairperson | Deurali Haryali BZUC |
| 16 | Laxmi Kumari Chaudhary | FPA | TAL, Nepal |
| 17 | Tilak Ram Chaudhary | Social Mobilizer | TAL, Nepal |
| 18 | Pokhar Singh Budhathoki | Chairperson | Purandhara BZUC |
| 19 | Manoj Gautam | Coordinator | NTNC, Bardia |
| 20 | Bal Bahadur Gharti | Chairperson | Rapti BZUC |
| 21 | Shiv Kumar Rana | Chairperson | Dhakeri BZUC |
| 22 | Bishnu Kumar Thapliya | Coordinator | ZSL, Nepal |
| 23 | Dhurba Acharya | Member | Saraswati BZUG |
| 24 | Harka Bahadur Bist | Chairperson | Madhyabindu BZUC |
| 25 | Savitra Pun | Chairperson | Kohalpur BZUC |
| 26 | Karna Singh B.C. | Chairperson | Kohalpur Urban Municipality, Ward no 2 |
| 27 | Krishna Chaudhary | Coordinator | CBAPU |
| 28 | Yam Bahadur Rawat | Ranger | BaNP |
| 29 | Sher Bahadur Thapa | Ranger | BaNP |
| 30 | Chuman Thakur | Ranger | BaNP |
| 31 | Asharam Chaudhary | Game Scout | BaNP |
| 32 | Sital Karki | Game Scout | BaNP |
| 33 | Khem Bahadur Dhami | Army | Arjuni Barrack |

| SN | Name | Designation | Organization |
|---|---|---|---|
| 34 | Hari Budathoki | Army | Arjuni Barrack |
| 35 | Hom Bahadur Dura | Army | Arjuni Barrack |
| 36 | Krishna Bhandari | Army | Arjuni Barrack |
| 37 | Bibek Buda Magar | Game Scout | BaNP |
| 38 | Kamala Acharya | Administration | BaNP |
| 39 | Gita Bist | Game Scout | BaNP |
| 40 | Bhakt Buda | Game Scout | BaNP |
| 41 | Manoj Ojha | Executive Director | WNLDA Pvt. Limited |
| 42 | Harish Bahadur Chand | Consultant | WNLDA Pvt. Limited |

Banke National Park and its Buffer Zone Management Plan


Government of Nepal
Ministry of Forests and Environment
Department of National Parks and Wildlife Conservation

**Banke National Park Office**
Obhari, Banke
Mobile: +977-9858041686
Webpage: http://bankenationalpark.gov.np
E-mail: banpbanke@gmail.com