

ANNUAL REPORT
2017

National Trust for Nature Conservation

MISSION STATEMENT

"To conserve, manage and promote nature in all its diversity balancing human needs with the environment on a sustainable basis for posterity-ensuring maximum community participation with due cognizance of the linkages between economics, environment and ethics through a process in which people are both the principal actors and beneficiaries."

With over 3 decades of experience in the field of participatory conservation, right from the grassroots level to policy and core research, the National Trust for Nature Conservation (NTNC) continues to steer a phenomenal track record of driving the principal of Conservation for Development. NTNC, established in 1982 by a legislative act, is an autonomous and not-for-profit organization, mandated to work in the field of nature conservation in Nepal. From its very inception the Trust fully understands that local communities matter, and that they are eventually stipulated to become the flag bearers of all conservation initiatives. To ensure that the locus of sustainable conservation is bearing on each of these communities, the Trust has successfully implemented various projects from nature and biodiversity conservation, cultural heritage protection, ecotourism development, alternative energy promotion, gender empowerment, livelihood enhancement. Given its deep integration with the community, and coupled with its expertise, the Trust maintains an unmatched advantage—whether it be in matters related to wildlife research and monitoring, community engagement, anti-poaching, conservation education, needs identification, assessment and impact study, capacity building, or in matters related to good governance and local institutional empowerment. This is one of the main reasons why NTNC continues to embrace a reputation that is crucial in cohabiting the development agendas for a large number of multilateral stakeholder projects. Its unique ability to perceive and interpret both from the point of view of resource conservation as well as conservation resourcefulness is been a notable model emulated by many others.

Working at both the levels of species and landscape conservation, geographically, the Trust's activities are spread from the sub-tropical plains of Chitwan, Bardia, Kanchanpur and Parsa in the lowlands to the Annapurna, Manaslu and Gaurishankar region of the high Himalayas, including the trans-Himalaya region of Upper Mustang and Manang. Currently, the Projects of the Trust are divided into three geographical areas - the lowland, the mid hills and the high mountains. The Trust's activities in the lowlands are based in and around Chitwan National Park, Parsa Wildlife Reserve, Bardia National Park, Banke National Park and Shuklaphanta Wildlife Reserve located in the central, western and far-western development regions of Nepal, through the Biodiversity Conservation Center (BCC) and Parsa Conservation Program (PCP) in Chitwan and Parsa, the Bardia Conservation Program (BCP) in Bardia/Banke and the Shuklaphanta Conservation Program (SCP) in Kanchanpur. Similarly, the Annapurna Conservation Area (ACA), the Manaslu Conservation Area (MCA) and the Gaurishankar Conservation Area (GCA) are the three protected areas managed by the Trust in the mountain region. The Central Zoo is the only project managed by the Trust in Kathmandu Valley.



NTNC

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FOREWORD

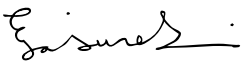
With leaping advances in modern living, challenges to nature and to the wild have perhaps never been more compelling. Rising populations coupled with increased urbanization, habitat encroachment, and consumer cultures have all put exorbitant pressures on the environment, invariably changing the course of nature's relationship to human beings. But nature as we know is clearly finite as much as it is giving. This is the reason why sustainability needs to continue to call on increased commitment. And that is only possible through collective action and response, where we are willing to acknowledge and accommodate the natural harmony of ecosystems, species and life forms as being a part of an indispensable collective.

The National Trust for Nature Conservation does its best to ensure this harmonious relationship takes top priority. Being guided in our mission to secure biodiversity for posterity, we understand the irreplaceable value that natural systems bring to life, and what it would mean if these are not secured. At the same time, our success over the past three decades lies in our honest ability to keep people at the heart of everything we do. Indeed our experience has shown that the conservation efforts in low income economies cannot be sustainable unless the needs and welfare of the local people are addressed. So whereas in the mountain protected areas we have adopted the approach of integrated conservation and development program (ICDP) – one that rests wholly on a participatory conservation model, our focus in the lowland protected areas is primarily on wildlife research and monitoring which also includes habitat management, biodiversity conservation, community mobilization, anti-poaching and illegal trade control.

This report is a cursory insight to some of our accomplishments in the fiscal year 2016/17. Heartfelt thanks must be acknowledged to the hard work and dedication of the Trust family, notably the Editorial Board, the Secretariat, the Projects, and the Governing Board of Trustees. Our sincere gratitude goes out to the Government of Nepal, the Ministry of Forests and Environment, Department of National Parks and Wildlife Conservation, including all our partner agencies and local communities, who have a major role for our success and striving. Comments and feedback from all our well-wishers and valued readers are most welcome. We expect that your continued support in the days to come will empower us to do more.

I am in full belief that our collective resolve for conservation for development will continue to make a lasting difference in peoples' day-to-day lives, for generations.

Thank you,



Govinda Gajurel
Member Secretary

ACRONYMS

ACA/P	Annapurna Conservation Area/Project
AEPC	Alternative Energy Promotion Center
APU	Anti-poaching Unit
AREAS	Asian Rhino and Elephant Action Strategy
BCC	Biodiversity Conservation Center
BCF	Barandabhar Corridor Forest
BCP	Bardia Conservation Program
BNP	Bardia National Park
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
BZMC	Buffer Zone Management Committee
BZUC	Buffer Zone Users Committee
CAMC	Conservation Area Management Committee
CAMOP	Conservation Area Management Operation Plan
CAPA	Community Adaptation Plan of Action
CBAPU	Community Based Anti-poaching Unit
CE	Conservation Education
CF	Community Forest
CFOP	Community Forest Operational Plan
CFUG	Community Forest Users Group
CGI	Corrugated Galvanized Iron
CHAL	Chitwan-Annapurna Landscape
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNP	Chitwan National Park
COP	Conference of the Parties
DAO	District Administration Office
DDC	District Development Committee
DFO	District Forest Office
DoF	Department of Forests
DPO	District Police Office
DNPWC	Department of National Parks and Wildlife Conservation
DWS	Drinking Water Scheme
EBC	Elephant Breeding Center
ECI	Elephant Care International
EMMP	Environmental Monitoring and Management Plan
FoZ	Friends of Zoo
FMSC	Forest Management Subcommittee
GBC	Gharial Breeding Center

GBV	Gender Based Violence
GCA/P	Gaurishankar Conservation Area/Project
GDA	Gender Development Assistant
GESI	Gender and Social Inclusion
GFC	Green Force Club
HDPE	High Density Polyethylene
HH	Household
HWC	Human Wildlife Conflict
ICDP	Integrated Conservation and Development Program
IDA	International Development Assistance
IGA	Income Generation Activities
IUCN	International Union for Conservation of Nature
Km	Kilometer
KW	Kilowatt
LHW	Livestock Health Worker
M	Meter
M/ICS	Metallic/Improved Cooking Stove
MCA/P	Manaslu Conservation Area/Project
MM	Milimeter
MoFSC	Ministry of Forests and Soil Conservation
MSFP	Multi-stakeholder Forestry Program
I/NGO	International/Non Government Organization
NTNC	National Trust for Nature Conservation
PV	Photovoltaic
PNP	Parsa National Park
SAWEN	South Asia Wildlife Enforcement Network
SCP	Shukaphanta Conservation Program
SLC	Snow Leopard Conservancy
SLCSC	Snow Leopard Conservation Subcommittee
SMART	Spatial Monitoring and Reporting Tool
SNP	Shuklaphanta National Park
TAAN	Trekking Agencies' Association of Nepal
TAR	Tibetan Autonomous Region
TMSC	Tourism Management Subcommittee
TV	Television
UC	Users Committee
UCO	Unit Conservation Office
USAID	United States Agency of International Development
VCBC	Vulture Conservation and Breeding Center
VDC	Village Development Committee
W/WT	Watt
WWF	World Wildlife Fund
ZSL	Zoological Society of London

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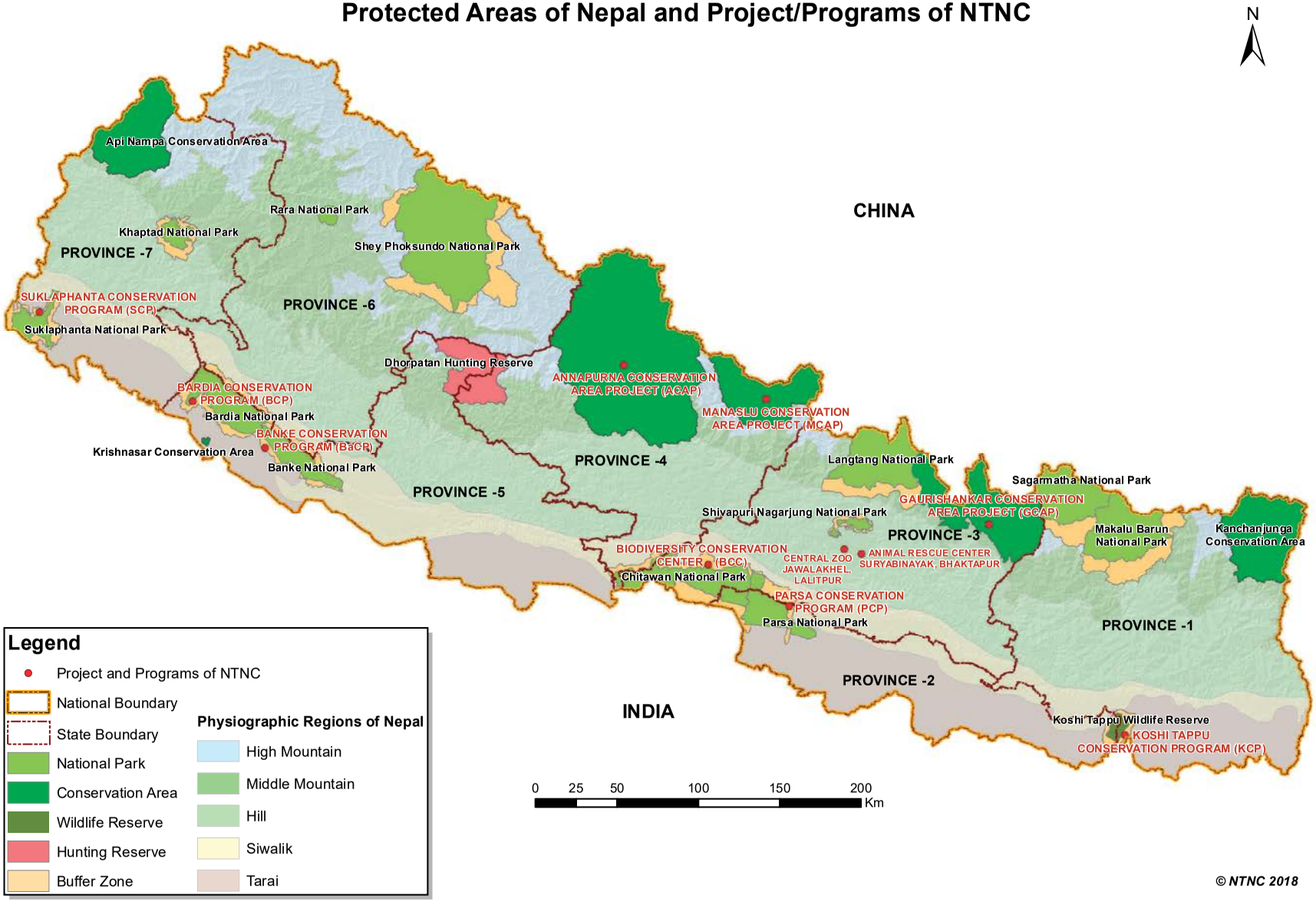
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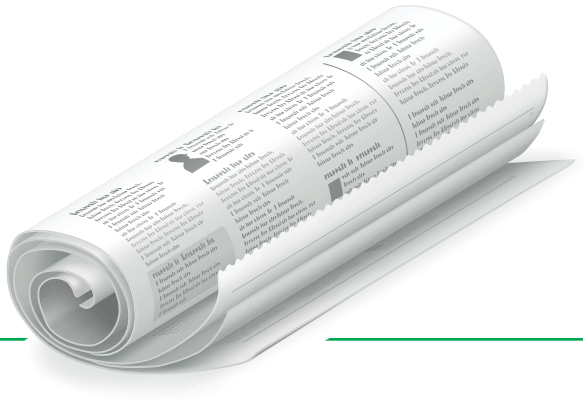
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Newsline

Species Translocation

Species translocation activities are carried out under the Government of Nepal's (GoN) initiative to maintain the original assemblage of select species in alternative habitats, as well as to secure and restore their viable population. Within the next three years, a total of thirty rhino (*Rhinoceros unicorni*) reintroductions have been planned from Chitwan National Park (CNP) to Shuklaphanta National Park (SNP) and Bardia National Park (BNP), wherein between 2016 and 2017, thirteen rhinos have already been translocated (BNP: 8 (5 in 2016 and 3 in 2017); SNP: 5 in 2017). Rhino translocation in Nepal started from 1986, wherein to-date a total of 100 rhinos have been translocated to BNP and SNP.

Another historic translocation of fifteen of the 'endangered' Wild Water Buffalo, or *Arna* (*Bubalus bubalis*) in Nepali, from Koshitappu Wildlife Reserve (KTWR) to Padampur area inside CNP will help to protect from inbreeding and gene pool erosion with domestic buffalo, disease from domestic livestock, besides other natural calamities. Likewise, seven individual swamp deer (*Rucervus duvaucelii*) were translocated from SNP to CNP. In Nepal, *arna* population is only confined to KTWR, whereas swamp deer is distributed only in SNP, with an introduced population currently thriving in BNP. Thus, these are absolutely critical steps to reduce potential extinction risks of their remaining population in the country. Translocation tasks were conducted under the leadership of Department of National Parks and Wildlife Conservation (DNPWC) with support from NTNC, WWF Nepal and ZSL Nepal.



South Asia Vulture Recovery Programme RSC Meet

South Asia Vulture Recovery Programme members from Nepal, India, Bangladesh and Pakistan met on June 28, 2017 at the 6th Regional Steering Committee (RSC) meeting held in Kathmandu. Besides engaging in discussions related to country-specific as well as transnational developments being undertaken to save some of the critically endangered vultures of South Asia, Nepal also handed over the RSC Chair to Bangladesh. Nepal has prepared the Vulture Conservation Action Plan (2015-2019) to guide its vulture conservation initiatives. Earlier this year in April 2017, in a first-of-its-kind case, six captive Gyps vultures (*Gyps bengalensis*) underwent soft release from the Kasara Breeding Centre in Chitwan to Pithauli in Nawalparasi district. Today there are 64 vultures at the Kasara breeding centre in CNP. Given the extraordinary role of vultures in the planet's ecosystem services, Nepal along with its other RSC members are fully committed to heighten focus of some of the persistent challenges in the South Asia Vulture Recovery

Programme. The meeting was chaired by the Secretary for Ministry of Forests and Soil Conservation Mr. Prakash Mathema, under the Co-chairmanship of the Deputy Regional Director of IUCN Asia Dr. Tej Pal Singh.

Immediate Relief to Wildlife Victims

During this fiscal year, families of six victims who had lost their lives following cases of wild elephant attacks were provided with relief support from the NTNC managed Human-Wildlife Conflict Management Fund. Being a major challenge for many local communities and conservationists, the Government of Nepal (GoN) has commissioned NTNC to manage a separate Human-Wildlife Conflict Management Fund in order to accelerate response efficiency for the victims. With the extended relief, the victims' families have consented to allocate the relief amount for enhancing their livelihood. For instance, in Saptari, Mrs. Sangeeta Devi Rajak – wife of one of the young victims (Sanjay) – plans to open a grocery utility store with the relief support received.

Miss Nepal 2017 Conservation Workshop

Nineteen finalists competing for the Miss Nepal 2017 title were hosted as part of their professional grooming at the Biodiversity Conservation Center (BCC) in Sauraha, Chitwan. Conducted under the theme "Greening Beautiful Minds – Beauty with Purpose" the 3-day workshop comprised of a strategic mix of both classroom-style and field-based sessions and is a part of NTNC's overall commitment to educate and motivate influential personalities to strengthen the cause for conservation-related initiatives. By sharing our expertise and passion in nature and wildlife conservation, NTNC expects that such exposure and insight would help empower social transformation, this while enabling contestants make a lasting difference for what the country truly represents at its core—its wealth of diversity, nature and peoples.



Wildlife Stockpile Management

In a clear message on the country's 'zero tolerance' stand against any and all wildlife-related crimes, a total of 4,012 wildlife parts of 48 species were incinerated at the Chitwan National Park (CNP) headquarters in Kasara on May 22, 2017. These included wildlife parts stored at Tikauli (1739 parts) and Kasara (2273 parts) that were collected from across the country over the past twenty years. Some of the major items burned included: 357 rhino horn; 67 tiger skin, apart from the 418 leopard skin, and skins of snow leopard, red panda and python; tiger claw; pangolin scale; musk pod; bear gall; leopard bone; Tibetan antelope fur, elephant tail hair; tortoise scale and sea horse among others.

The grand initiative was taken under the lead of the Government of Nepal and its line agencies, and was made successful through the support provided by the DNPWC, Nepal Army, NTNC, WWF, ZSL and SAWEN. Under the leadership of MoFSC, NTNC had a key role in the validation and verification of the stockpiles, along with ensuring thorough implementation of the mission on the ground. Inventory management included identifying and barcoding each wildlife part, whilst also preserving the DNA samples for future referencing.

The historic occasion that was made to coincide with the International Biodiversity Day was undertaken in the presence of over 500 participants including the Hon. Minister for Foreign Affairs Mr. Prakash Sharan Mahat; Hon. Minister for Forests and Soil Conservation (and NTNC Chairman) Mr. Shankar Bhandari; Hon. Minister for Population and Environment Mr. Jay Dev Joshi; Hon. State Minister for Forests and Soil Conservation Mr. Dirgha Raj Bhat; the US Ambassador to Nepal, Ms. Alaina B. Teplitz, among others. The day will indeed go down in history as reminding of the fact that Nepal has no place for wildlife parts that are not living.






Faunal Biodiversity Assessment in Chure Range

In order to assess the status of biodiversity, pertaining threats and help devise conservation sensitive policies and interventions in the Churia Range of Nepal, faunal biodiversity survey was undertaken in the Far-Western block- Karnali river to Mahakali river section – 2172 km^2. The other three blocks planned in the survey include the Eastern block – Mechi river to Bagmati river section – 4,786 km^2; the Central block – Bagmati river to Tinau Khola section – 5,624 km^2; and the Western block – Tinau khola to Karnali river section – 6,401 km^2. Intensive camera trapping methods were used, wherein a pair of camera traps were placed in 2.5 km x 2.5 km grid cells. Density of prey species in all the Churia range will be estimated using line transect method.

Genetic Lab Established

As part of the national capacity building on wildlife disease and surveillance, the first of its kind molecular/ genetic lab in the country has been successfully established at BCC. Genetic study of musk deer, pangolin, and translocated/ rescued animal were undertaken during this fiscal year. Elephant *Endotheliotropic Herpes Virus* (EEHV) type 1 infection was also done on breeding herds of Asian elephants. In due time, with the upgrading of lab infrastructure and equipment, it is expected that the facility will bring immense promise and scope for researchers and wildlife science across the country.



Special Day Celebrations

NTNC hosted three major national-level special days at its premises this year involving some 4000 participants. This year's World Environment Day (WED 2017) saw the coming together of more than 3000 participants at the Central Zoo premises. The event was jointly organized by related conservation partners, which include, Lalitpur Metropolitan, NTNC, IUCN, WWF Nepal and BCN. Participants at the event consisted mostly of schools students and teachers from the 'Friends of Zoo' network (FoZ)—a popular program run by Central zoo presently engaging more than 120 schools in Kathmandu Valley.

Celebrated under the theme: 'Listen to the youth voices' (संरक्षणको आधारः युवाको आवाज), the World Wildlife Day celebrations was held at the NTNC Auditorium on March 2, 2017, wherein the event took to honor the over one-fourth youth population around the world between the ages 10 and 24 years and their subsequent role in making a difference for conservation. At the event, the Chief Guest – Hon. Minister, MoFSC (and NTNC Chairman), and a panel of experts fielded questions from the press and the audience mostly consisting of students.

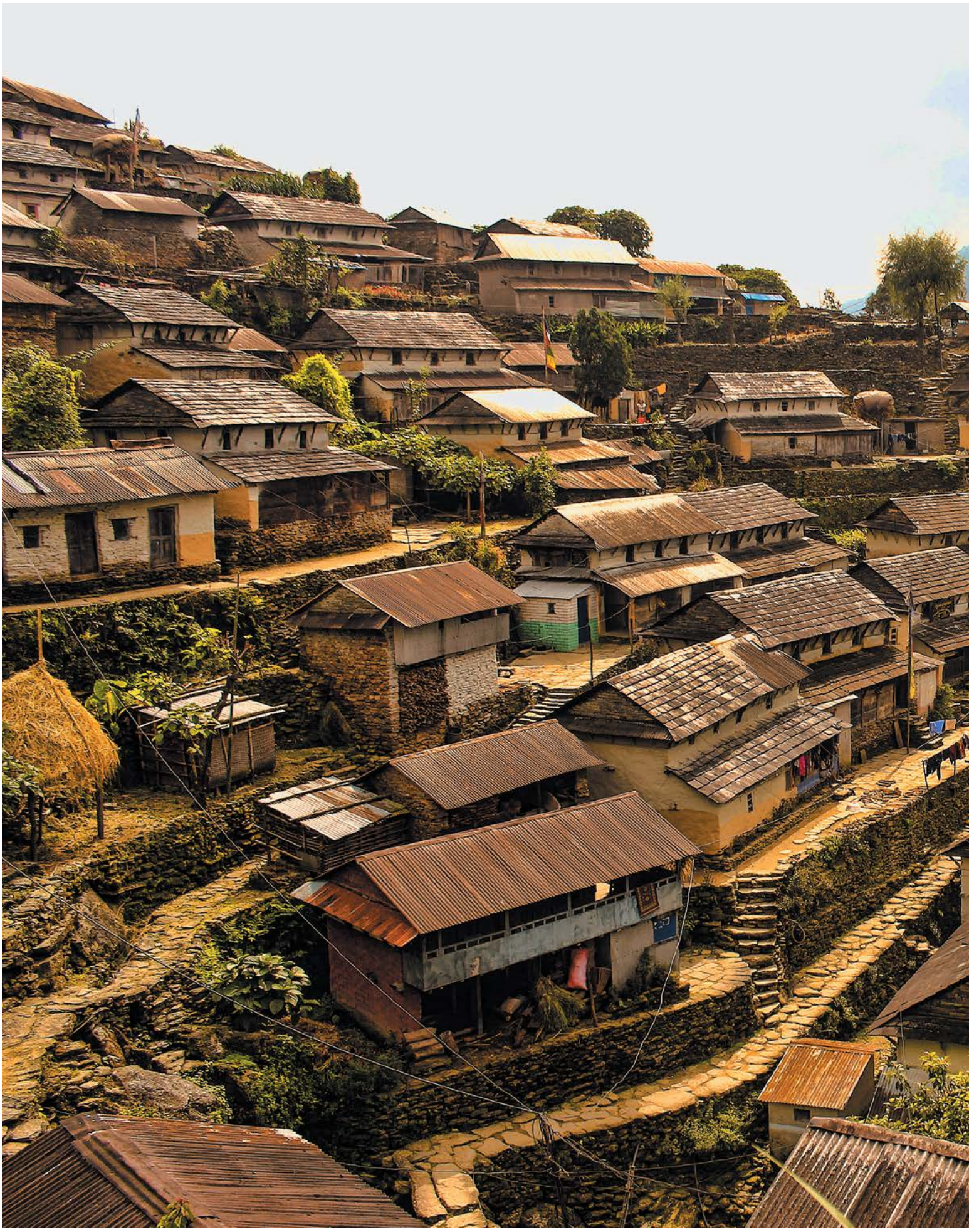


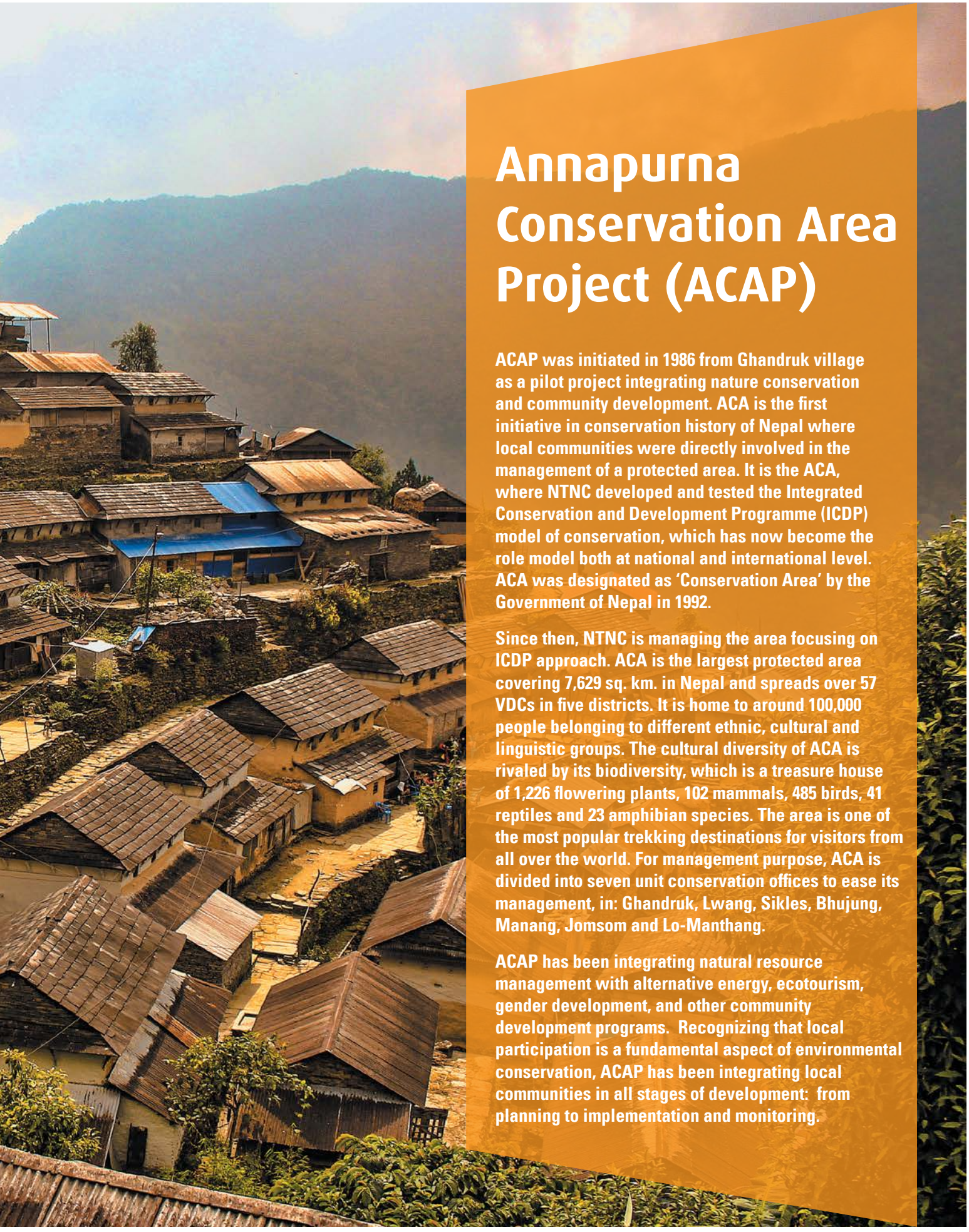
Again, this year's Global Tiger Day helped engage over 500 participants on the global and national context of tiger populations along with their overreaching significance. An expert panel discussion conducted under the theme "Fresh Ecology for Tigers' Protection" voiced the urgency for all to understand the invaluable role of tigers, and their importance and impact as an 'umbrella species' in contributing to shaping a healthy eco-system.

NTNC begins Accreditation for Green Climate Fund (GCF)

GCF's National Designated Authority (NDA)/Ministry of Finance has nominated NTNC this year as a National Accreditation Entity. Going forward this will enable NTNC to move ahead with the Accreditation Process, thereby enabling it with the status of Direct Access Entity (DAE)-National. Once successfully accredited, the funding mechanism promises to be a major game changer in accessing global fund and strengthening climate financing to undertake climate change adaptation and mitigation programmes/ projects in the country.


NTNC
THE NORTH FACE





Annapurna Conservation Area Project (ACAP)

ACAP was initiated in 1986 from Ghandruk village as a pilot project integrating nature conservation and community development. ACA is the first initiative in conservation history of Nepal where local communities were directly involved in the management of a protected area. It is the ACA, where NTNC developed and tested the Integrated Conservation and Development Programme (ICDP) model of conservation, which has now become the role model both at national and international level. ACA was designated as 'Conservation Area' by the Government of Nepal in 1992.

Since then, NTNC is managing the area focusing on ICDP approach. ACA is the largest protected area covering 7,629 sq. km. in Nepal and spreads over 57 VDCs in five districts. It is home to around 100,000 people belonging to different ethnic, cultural and linguistic groups. The cultural diversity of ACA is rivaled by its biodiversity, which is a treasure house of 1,226 flowering plants, 102 mammals, 485 birds, 41 reptiles and 23 amphibian species. The area is one of the most popular trekking destinations for visitors from all over the world. For management purpose, ACA is divided into seven unit conservation offices to ease its management, in: Ghandruk, Lwang, Sikles, Bhujung, Manang, Jomsom and Lo-Manthang.

ACAP has been integrating natural resource management with alternative energy, ecotourism, gender development, and other community development programs. Recognizing that local participation is a fundamental aspect of environmental conservation, ACAP has been integrating local communities in all stages of development: from planning to implementation and monitoring.

NATURAL RESOURCE CONSERVATION PROGRAM

Human-Wildlife Conflict Management

Human-wildlife conflict (HWC) scenarios have become increasingly pressing for conservationists globally. In the case of Nepal's conservation areas, in which large communities and wildlife reside together, these pressures are all the more evident. This year more than 250 cases were reported throughout ACAP, whereby in Manang alone more than 100 livestock were lost. Conflict situations occur mainly due to the loss, degradation and fragmentation of wildlife habitats caused by human activity such as logging, animal husbandry, agricultural expansion, including development of other infrastructures. In response to these, ACAP Manang conducted 11 HWC-related trainings targeting some 300 community members comprised mostly of local herders, livestock owners and forest management personnel, green force club (GFC) members and community based anti-poaching units (CBAPU). Keeping focus on better understanding HWC scenarios, this year's research grants from ACAP also covered human-common leopard and black bear conflict in the southern belt, and wolf-people conflict in the north.

A Case of Manang

Every year ACAP Manang has been contributing Rs. 35,000 to each of the ten snow leopard conservation sub-committees that are responsible for ensuring human-snow leopard coexistence. Besides participant sensitization for implementing best practices, the training also extended awareness among the locals regarding forest resource and wildlife management – including aspects related to the government's Wildlife Relief Damage Support Guidelines, 2069 B.S (2nd Amendment 2074). As part of the same initiative, ACAP Manang also distributed solar 'tukies' (lights) to ten mobile herders along with tent sets and sleeping bags. Such measures have been significant in supporting large numbers from the community to deal with the crisis of livestock depredation and have had a significant role in increasing Manang's wildlife population over the past decade

Forest Nursery Plantation

Forest conservation is a major focus aimed at uplifting the livelihood potential of local people in different parts of ACAP. Since large number of households still depend on firewood for cooking purposes, demand for fuel wood naturally tend to have a mounting pressure on forest resources. To ensure that forests continue to fulfill local timber requirements, while at the same time enhancing forest cover, ACAP operates nine of its own project nurseries from which this year alone more than 16,000 tree saplings/seedlings were distributed. These were besides interventions made from private and community nurseries that the project supports. In total this year, 55,000 saplings/seedlings of varying species were distributed from the nineteen nurseries in the region. Besides fulfilling community's needs and reducing forest pressure, the nurseries encourage private and community plantation and help in greening of private and public lands, subsequently minimize instances of erosion threats.

More than 55,000 tree saplings/seedlings were distributed from the nineteen nurseries in the ACAP region helping meet the needs of scores of households, while at the same time greening large areas and subsequently minimizing instances of erosion threats in the community



Rhododendron Forest Regeneration

The Ghorepani-Tadapani area – a popular trekking route – is also known for the largest rhododendron forests of Nepal. In spite of this, uncontrolled grazing in the area has led to very sparse regeneration in recent years with mostly old rhododendron trees. Open and uncontrolled grazing has been a major detriment against forest regeneration initiatives throughout the country, especially since livestock prefer to graze on young and tender sprouts. To deal with this, fencing installation work was undertaken with the

support of CAMC Ghara. Besides regenerating the beautiful rhododendron forests, the fence will have a huge impact in conserving the overall biodiversity and beauty of the region.

Soil and Water Conservation

Landslides are a major problem in the mountainous region of Nepal often threatening scores of lives and property. Although there is still much to do in this front, ACAP continues to work with large number of communities across the region, especially with those who are most prone to such disasters. For instance, this year, ACAP Bhujung provided more than 300 gabion boxes and 250 bamboo cuttings in order to help people cope with the brunt of high rainfall in the region. Eleven landslide areas that were treated in the process will help secure more than 1600 households from landslides related risks in the future.

Silvicultural Practice

Tasked with managing natural resources and enhancing forest quality, ACAP understands the importance of silvicultural operations among communities that are especially unaware of its benefits and methods. To help communities in ACAP Mustang maximize benefits of such practices, this year a silviculture practice demonstration plot was established in the degraded lands and landslide areas of Sauru village in Kobang. In the process seedlings, sapling and poles were provided along with pruning saw, sick char and scissors for thinning and pruning sapling of *Dhupi salla*. Related trainings were also carried out in seven different locations. Besides this, seven silvicultural-related trainings were undertaken in the ACAP region. Along with soil conservation and plantation, adoption of silvicultural practices ultimately help ensure that forest resources benefit community, while achieving the objective of regeneration of forest growth and greenery.

Pole support for *Dharjyo*

Keeping with the traditions of the local community and continuing to empower and support them has always been at the heart of ACAP. Households in ACAP Manang, a majority of whom follow the Buddhist tradition, generally use pole size trees as prayer flags, locally known as *Dharjyo*. The prayer flags which are replaced more than once a year in each household naturally tend to put undue pressure on forest. In response to this, ACAP Manang has begun to distribute iron poles as an alternative to tree poles. Discouraging deforestation activities in the high mountains like Manang are even more significant since greening conditions are not so favorable due to the trans-Himalayan dry and cold conditions. In the recent past, including this fiscal year, 300 households within ACAP Manang that were supported with such iron poles will greatly impact the community's cultural endurance while at the same time ensuring that unnecessary felling of trees is avoided at best.

Including this year, the 300 households within ACAP Manang that were supported with iron poles to replace the traditionally preferred wooden poles will greatly impact the community's cultural endurance while at the same time ensuring that unnecessary felling of trees is avoided at best

Community in Anti-Poaching

Poachers and their discreet nexus continue to pose as major threats to conservation efforts around the world. NTNC has done its best to keep vigilance and pro-activeness to deter such incidents by mobilizing anti-poaching units on the ground who undertake action against perpetrators as well as continue to stimulate community level awareness. This year, ACAP Ghandruk and Sikles organized a special campaign for the members of 11 community-based anti-poaching sub-committees aimed at educating about various rules and regulations related to wildlife conservation, process of sample collection, process of investigation, and actions to be taken after finding evidence. The workshop was especially useful in revitalizing dormant anti-poaching groups as well urging critical ideas and discussions for strengthening coordinated future actions. Such sessions are absolutely essential since they inform collective intelligence and coordination, and help to create pro activeness against the sophistication of poaching networks.



Biodiversity Tools and Techniques Training

In order to supplement institutional capacity, numerous skill based trainings, workshops, seminars, tours and other capacity enhancement exercises focused on building staff skills are carried out each year. These are targeted in a way to strengthen impact or redress prevailing gap of activities and programmes being implemented on the ground. As part of this, a week-long biodiversity technical trainings was conducted each in Sikles and Mustang among 40 Natural Resource Conservation (NRC) staff from across ACAP. The training focused mainly on research and monitoring aspects. Technical aspects covered areas related to camera trap studies, basic GIS and Google Earth pro-mapping, camera/photography for species identification, non-invasive sampling for genetic analysis, bird watching and bird identification using binoculars, books and camera, as well as knowledge on herpetofauna.

Anti-Poaching Strengthening for Security Forces

As primary security partners in conservation, over the past three years alone more than 200 security personnel in ACAP have been enabled with strengthened anti-poaching capacities. A major challenge expressed throughout workshops and interactions indicate the difficulty faced by security personnel in identifying body parts of poaching sensitive wildlife and illegally collected NTFP species

Recognizing the primacy of security forces in controlling poaching and illegal wildlife trade, along with illegal collection of forest products, this year ACAP conducted three anti-poaching-related workshops. A total of 79 security personnel participated in these trainings wherein knowledge for improved vigilance and knowhow, along with matters related to laws and regulation was extended. Besides capacity building, such workshops ensure that coordination and knowledge of real scenarios on the ground are shared, so that more effective solutions are devised. In the past three years alone more than 200 security personnel have been provided with such trainings. A major challenge expressed throughout these workshops indicate the difficulty faced by security personnel in identifying body parts of poaching sensitive wildlife and illegally collected NTFP species. This makes an even stronger case for us to continue to reach out to more and more security forces in the future.



COMMUNITY INFRASTRUCTURE DEVELOPMENT

Irrigation Development

Agriculture continues to remain as a core occupation for majority of households at ACAP. Thus, consistently identifying their needs and optimizing production potential is a crucial difference NTNC strives to make within the community. For instance, in ACAP Lwang, which has tremendous potential for agriculture and forestry development, irrigation facilities are required to be developed to keep with quality yields. A common case is where most of the paddy fields – a major agricultural produce in the area – don't have sufficient access to irrigation and depended instead on rain water. Thus, this year alone, ACAP Lwang extended its irrigation development programme to reach 13 locations in seven different sites. Within this arrangement, the community was also required to contribute about 20% of total cost to ensure ownership. In turn, the irrigation canal construction works will benefit more than 600 households and help irrigate in excess of 1550 *ropani* land (78.8 ha) thereby directly impacting farmers' production and income in the future. Throughout the region ACAP made related interventions directly in over twenty other sites.

Community Drinking Water Supply

In order to ensure that the community has regular and safe access to drinking water supply (DWS) facilities, ACAP has been implementing the '*one ghar one dhara'* programme (T: one house one tap). This year DWS facilities were installed in 16 villages throughout the ACAP region which will

directly support over 1500 households. Although under implementation since the past several years, the '*one ghar one dhara'* programme require regular maintenance and upkeep. For instance, in ACAP Sikles this year, DWS installations that were damaged due to landslides were repaired for 94 households in Tongi and Warchok villages. Besides ensuring ready access and proximity, DWS also helps promote village hygiene and sanitation. Thus, by ensuring that every household has the right to access drinking water, ACAP continues to touch the lives of thousands of families helping meet their daily needs.

ALTERNATIVE ENERGY

Biogas Support Program

Large number of people residing in Nepal's remote mid-hills still use firewood for cooking purposes. This naturally creates stringent pressure on forest resources while at the same time giving rise to domestic health issues due to smoke congestion. Here biogas plants act as proven alternatives to replace community's dependence on forest for fuel, wherein studies have estimated that on an average one biogas plant reduces 600 kg firewood annually. Thus in order to motivate people towards making the switch to biogas, ACAP Lwang in particular has been playing a leading role for several years. With already 75 percent households (1100 families) of the two wards of Machhapuchchhre Rural Municipality 3 and 4 (previously Lahachowk and Ghachok VDC) having biogas installations, these wards are planned to be declared as 'model biogas villages' in the near future. This year 58 households who have made the switch will definitely help in achieving NTNC's mission of creating a culture of clean and resilient energy for the future.

SUSTAINABLE TOURISM DEVELOPMENT

Porter Shelter Reconstruction

Being particularly favored for trekking, ACAP works tirelessly in ensuring that tourists in the region are well facilitated. These include building and maintaining trails, tourism services, and diversifying newer destinations and offerings so that the value and richness of the Annapurna as a major trekking destination in the world is justified. In ACAP region large number of trekkers use guides and porter services to accompany them. This being so, it is not always the case that hotels and lodges are aplenty in all trekking routes. Therefore, ACAP has been building shelters for porters in various routes to provide them with access to accommodation in areas that are very remote. In ACAP Lwang, already 15 porter shelters have been constructed and repaired for tourism development. But numerous porter shelters were destroyed following the Nepal earthquake in 2015. During this year, ACAP Lwang reconstructed the porter shelter house with two rooms in Meshram on the way to the popular Machhapuchchhre Model Trek route. Given the isolation of this area, with hardly any hotels and lodges, upkeep of these shelters ensure that basic facilities for porters continue to maintain top priority.

With already 75 percent households of the two wards of Machhapuchchhre Rural Municipality having resorted to biogas installations, and another 58 households adding this year, the switch will be a lasting step to help in achieving NTNC's mission of creating a culture of clean and resilient energy within local communities of the future



Homestay Capacity and Destination Promotion

ACAP maintains a strong priority in promoting the diverse and rich cultures of the communities living in the region. Through the many homestays in operation, NTNC enables tourists to directly experience and access the special and distinct way of life of the remote communities that have thrived since generations. Simultaneously, ACAP helps promote homestays by capacitating them with basic skills and knowhow for operating hospitality services, at the same time providing them with other support systems as might be needed. In total eleven such trainings were undertaken this year incorporating more almost 300 homestay operators. For instance, ACAP Lomanthang undertook a six-day homestay management training in Chhoser and Chunjung village in Upper Mustang. Carried out with the aim of improving and promoting homestay capacity and quality, twelve homestay owners were trained on aspects relating to cooking, hygiene, accommodation services and general management. Another three days of nature and culture guide training was provided to 23 local youths in Lomanthang. Although interventions such as these tend to look small, they help bring immense value among the people, their culture and in their livelihood. Besides this, with the aim to market homestays and destination variety for tourists, this year ACAP undertook production of a documentary, along with a feature story covering Bhujung, Ghalegaun, Odar gaun and Manang. Production of the promo materials was outsourced to journalists from Kantipur Media Group, a leading media house in the country, whereby benefits from these initiatives have already been reflected positively.



Homestay Observation Tour

Home stay development in ACAP has been a major focus for tourism promotion and management since its inception. But despite its potential many homestays operator lack exposure and for improving services and guest experiences. Thus, to encourage exposure and provide firsthand experiences related to management, culture, food, reception, hospitality, sanitation, impact, among others, an observation and learning tour was organized for homestay operators of Ghandruk, Sikles and Bhujung to the Amaltari Homestay in Nawalparasi – one of the most successful homestays operating in the country. ACAP expects that a similar motivation for quality and unique services will guide the eighty homestay participants from the tour.

Alternative Trekking Route Promotion

Trekking opportunities are rife in ACAP region thus making it home to some of the highest trekkers in the country. This is mostly due to the immense diversity of the landscape, fauna and flora, and the cultures of the people. Despite tourist's preference for popular trails, there are numerous trails and locations in the region that promise tremendous potential for trekking. Thus, it is absolutely essential that new and alternative trekking routes continue to be explored and developed so that more trekkers are able to experience greater variety, this while continuing to extend tourism opportunities for other remote communities. For instance, in Upper Mustang, there is huge potential to develop trails adjoining Manang and Dolpa districts. One such trail is the route to the Sarebung Pass (over 6000 meters) that connects Mustang and Manang district to the east of Lomanthang. An interesting fact about Sarebung is that the distance between the Pass and the Peak is only about 300 meters. Another place of intrigue is the Damodar Kunda area that is a sacred place for Hindus and Buddhists. Thus to promote these two destinations, ACAP supported in developing a 1800-meter trekking trail through CAMC Surkhang while initiating the alternative trek route survey programme through CAMC Tsarang. Similar trail construction related works were undertaken across more than 35 different locations in ACAP this year.

Again to provide alternative trekking opportunities from Mustang to Manang, construction of a 5 km trekking trail with 1 meter width was completed along the Jomsom to Tilicho Mesokanto la Pass route via Thini village. The new trail will especially be a great alternative for trekkers looking to avoid motorable roads and have a unique experience. Likewise, to ensure safety and easy access for trekkers as well as for local people walking to the Tilicho lake – the largest glacial lake at an elevation 4919 meters – a total of 200 meters of trail was repaired between Palgyakharka to Tilicho Base Camp. The new steel railings installed as part of the repair work will be a great safety addition for the more than 8000 tourists who visit the Tilicho lake, especially during snow fall when the trails become very risky due to their steepness.

Ghandruk Park Construction

Ghandruk village being among the most favoured destinations within the ACAP region receives more than 50,000 tourists annually. To diversify tourism opportunities for visitors and to promote the village as a center for eco-tourism, ACAP Ghandruk has initiated a project to build an exclusive Eco Park in the region. As a multi-year project with a total budget of Rs. 2,500,000, already more than 60 percent of work has been completed. Major works undertaken in 2017 were related to land excavation and stone cutting, trail widening and stone pavement construction, gabion box filling and park fencing in which the then Village Development Committee of Ghandruk significantly supported. Along with helping prolong visitor stay, the nature park will be a great addition to the community's infrastructure and contribute significantly to measures related to conservation education and recreation. This is seen from the initiation of the Dhampus Eco Park construction to which ACAP continues to lend close support each year.

New ABC Trekking Trail Construction

Besides the highly popular Annapurna Base Camp (ABC) trek situated in Kaski district, the newly explored ABC trek route of Narchyang in Myagdi district promises incredible potential. The new route that is totally vehicle-free takes up to eight days (adjoining the Khopra trail), and offers to be as equally attractive as the Poon Hill or ABC trek.

For promoting this route, ACAP supported with the construction of a suspension bridge over the river crossing, along with completion of 1500 meters of trail construction and trail widening works. The new route is expected to gain momentum among adventure seeking tourists in the coming years which will also help expand tourism value to more and more communities

The newly explored ABC trek route of Narchyang in Myagdi district promises incredible potential in the coming days, especially among adventure seeking tourists who have a longing for the wild and high pristine sights along the route



First of Certified Trail Auditors and Trail Standards Guideline

Following the successful implementation of the 10-day training in the Annapurna Sanctuary Trek in October 2016, three staffs from NTNC – Ms. Rashmi Acharya, Mr. Bishnu Singh Thakuri and Mr. Bikhyat Sherchan – were certified as the first of eleven Trail Auditors of the country. Under the initiative of SAMARTH-NMDP, the 'Nepal Trekking Trail Standards Implementation and Trail Grading System Development Training' was conducted in association with the World Trails Network and Green Flag Trails International with a vision for developing quality trail experiences. Presided over by the Secretary of Ministry of Culture, Tourism and Civil Aviation (MoCTCA), the Trails Standard Guidelines for Nepal was also unveiled as part of the certification ceremony. With Nepal now having

its own set of certified trail auditors, prospects for developing a variety of trails, destinations and experiences in the country remain abound for promoting quality trekking tourism opportunities.

Safe Drinking Water Installation

In ensuring that the pristine landscapes of the Annapurna region continue to thrive, ACAP has had a major role. Implementing proper waste management practices has thus enabled host communities overcome the pressures from increasing tourism. In this, numerous safe drinking water (SDW) stations installed within major trekking locations has had a significant contribution. This year through the support of SAMARTH-NMDP, another SDW station installed in Jhinu Danda, that is part of the much popular Annapurna Sanctuary Trek route, will make for a total of 7 SDW facilities within this route alone, and a total of 22 SDW stations across ACAP region. Plastic/mineral water bottles are prohibited in the Annapurna Sanctuary and as an alternative these facilities give tourists ready access to safe and tested purified drinking water at an affordable price. Further, since the SDW stations are managed by the communities themselves, they also support in their income generation – as is in this case, where the SDW is being managed by the Women's Group of Jhinu-Thaulu.

Tourism Photo Exhibition

A special photo exhibition was held this year at ACAP's Birethanti on the occasion of the World Tourism Day. As a popular transit check post, the exhibition was able to successfully connect directly with tourists. In the process, several hundred had the opportunity and insight to the diversity and offering of the entire region. During this, works of more than thirty local photographers were displayed, with themes related to landscape, peoples and culture of the Annapurnas taking center stage.

AGRICULTURE & LIVESTOCK DEVELOPMENT

Cardamom Plantation for Income Generation

Cash crop farming opportunities in the ACAP region have become increasingly noteworthy of success – especially in the south, in Bhujung, Sikles, Lwang and Ghandruk area. This year alone more than 180,000 saplings of cardamom, tea and coffee were distributed to the various farmer groups in the region, besides numerous capacity-related trainings. Given the ideal suitability of these





high altitude villages for growing organic quality products, more and more farmers are seen to take to growing such crops. Cash crops such as these have already contributed tremendously in eradicating poverty, especially since cereal crops becoming increasingly vulnerable from livestock and wildlife. Besides diversifying community's scope for income, these initiatives have simultaneously resulted in increased productivity of barren lands, discouraged out-village migration to cities, and introduced modern farming techniques, while also helping in the greening of the environment. The increased investment and interest in cash crop among local farmer groups is indeed positively indicative of the market potential and response of the high quality organic produce of the region. Some of the related interventions made during this year included:

ACAP Lwang distributed cardamom seedlings – 20,000, tea seedlings – 2,000, coffee seedlings – 200, fruit and nut tree seedlings, besides 48 kgs and 70 packets of 25 different vegetable seeds

ACAP Sikles distributed a total of 81,850 seedlings (Cardamom-75,150, Coffee-4700, and Tea-2500) covering an area of more than 8 hectares.

In ACAP Bhujung, already more than 25 hectares of barren land has been converted into tea gardens. Besides last year's support for establishing a tea processing plant along with installing two machine driers and rollers, a total of 23,470 tea seedlings were distributed from three local nurseries. Additionally, 40,000 cardamom seedlings and two dryers were also distributed.

14,000 cardamom seedlings were planted in the private lands of Ghandruk village wherein barbed wire and stone fencing work was also completed. Currently 3 hectares area is covered with tea and cardamom.

CONSERVATION EDUCATION AND EXTENSION

With the aim of generating awareness among locals—especially among the youth—to engage with matters related to nature conservation as well as development, the CEEP program consists of two main components; in-school and out-school activities. In-school activities are focused to engage students and teachers whereas, out-school activities engage the wider community. Presently with an outreach of more than 5000 students, some 93 schools follow the CEEP curriculum book designed by ACAP. The guiding model adopted believes that at the foundational level youths have a special role to bring about a positive change in the attitudes of the wider community.

To uplift the living standard of local people and create self-employment opportunities, this year alone more than **180,000** cash crop saplings of cardamom, tea and coffee were distributed in the southern villages of ACAP region, besides numerous capacity-related trainings. Given the ideal suitability of these high altitude villages for growing organic quality products, increased investments and interest among local farmer groups is indeed positively indicative of the market potential and opportunities of the area

Special Day Celebrations

Also known as the Annapurna Anniversary, this year's 30th Conservation Day (on December 10) was celebrated with great pomp and fare throughout the villages of ACAP region. Marking three decades since ACAP's inception, the event that is meant to be a gesture of gratitude to local communities for their support in conservation activities included special awareness, education and interaction programmes, local agro and handicrafts exhibition, song and dance, fun and game competitions, reflection and revelry, among others. Across ACAP, thousands of participants were made aware of their right and responsibility to continue to participate and press for collective conservation agendas of the region. Besides this, other special events saw the coming together of several thousands to celebrate other conservation related events like the World Environment Day, Wildlife Week, World Tourism Day and International Women's Day among others.

Literature Workshop

Honing the skill of story writing is necessary to encourage reflection, appreciation and response into words. In order to build on communicating artistic freedom among students and enable them express with fluency and articulation, ACAP Jomsom conducted a three-day literature writing workshop this year for 19 participants – with student representatives from all its 11 conservation education (CE) schools taking part. As the resource person of the workshop, Ms. Sujana Dahal from Seema Aavas was incredibly taken by the passion and cause of student's to appreciate and express nature as a living entity; in the process thus also acknowledging ACAP's role in engaging conservation among young students.

CAPACITY BUILDING

Building Community Leadership

As a grass-roots organization, from the very beginning, ACAP has paid close attention to strengthening institutional and community capacity. Proactive leaders are consistently encouraged to work together in collaboration and in the larger interest of the community. As part of these, leaders of community institutions like CAMC, TMsC, Women Group, Youth Club etc. are trained and guided around aspects related to management and mobilization, conducting meetings, taking minutes, public speaking, presentation and communication etc. This year, six days leadership trainings were conducted by ACAP Ghandruk and Bhujung with financial support from the Centre of Development Innovation (CDI), with special focus on empowering women leadership. Others trainings included those related to tourism, biodiversity assessment, overseer's technical enhancement, accountancy and management reaching out to several hundred participants.

Short Course Design and Delivery Training

Aimed at enhancing the impact of training delivery at the community level, this year a five-day course was undertaken for seventeen field personnel at ACAP. Comprising of programme members closely engaged to Natural Resource Conservation, Sustainable Tourism, Gender Development, Alternative Energy, Agriculture, Conservation Education, and Community Infrastructure Development, the training focused mainly on course design attributes, structure and delivery modules. Attributes related to adopting creativity







and implementing monitoring and evaluation standards were some of the key areas covered. Given that a great deal of focus is invested on enhancing community skill and knowhow, ACAP understands the indispensability of its own human resources to creating a meaningful impact on those whom it serves and represents.

Community Exposure Tours

As a pioneer in successfully implementing participatory conservation and development models across the globe, expectations among the communities of ACAP are very high. Given its strengths and future imperatives, regular exercises related to community leadership, exposure and capacity building are all the more necessary. This year a 10-day International Exposure Tour to India was undertaken for 30 community members to the Jim Corbett and Rajaji National Park, and to Agra to enhance their level of understanding and outlook in driving future natural resources and tourism management initiatives in their respective communities. Likewise, another similar tour within the country was undertaken for 40 CAMC members to observe the homestay and buffer zone models being implemented in Chitwan and Bardia National Parks. By enabling communities with opportunities for related interaction and exchange, it is expected that their scope for broadening knowhow and success will continue to grow and reflect in the region.

By enabling communities with opportunities for cross-learning and exposure, through undertaking international and domestic visits, ACAP prioritizes on community learning and capacity building to reflect on the growth of the region







Manaslu Conservation Area Project (MCAP)

Manaslu Conservation Area (MCA), declared through Nepal gazette on 28 December 1998, is the third conservation area in Nepal and second conservation area entrusted to NTNC for management. It spreads over in an area of 1663 sq. km covering 7 VDCs of northern Gorkha, MCA is adjoined with Tibetan Autonomous Region (TAR) of the People's Republic of China to the north and east, parts of Gorkha district to the south, and Manang and Lamjung districts to the west.

MCA has its own significance in terms of socio-cultural, biological and geo-morphological diversity. People of Tibetan origin following Buddhism, dominate the area. Economically, the people of the region rely on agriculture and animal husbandry system and depend upon natural resources for firewood, timber and medicine but the agricultural production is very low because of limited agriculture land, lack of irrigation and high altitude. Trade and tourism enterprises are the secondary occupation in the area. Ecologically, MCA has a diverse range of habitats which boasts many rare wild animals such as Snow leopard (*Panthera uncia*), Musk deer (*Moschus leucogaster*), Brown bear (*Ursus arctos*), Red fox (*Vulpes vulpes*), Jackal (*Canis aureus*), Blue sheep (*Pseudois nayaur*), Himalayan thar (*Hemitragus jemlahicus*), Himalayan serow (*Capricornis thar*), Wooly hare (*Lepus oiostolus*) and Himalayan marmot (*Marmota himalayana*). Likewise, varieties of birds like Snow partridge (*Lerwa lerwa*), Tibetan snowcock (*Tetraogallus tibetanus*), Chukar partridge (*Alectoris chukar*), Himalayan griffon (*Gyps himalayensis*), Golden eagle (*Aquila chrysaetos*), etc. with diverse plant communities are found in the region.

NTNC through MCAP has been working for the conservation and management of natural resources through holistic and integrated conservation and development program (ICDP) approach that promotes local people as the beneficiaries as well as key actors of conservation. The project has been working closely with the conservation area management committees (CAMCs) to conserve the biodiversity, natural resources and for sustainable tourism development.

NATURAL RESOURCE CONSERVATION

Forest Regeneration and Plantation

A total of 4408 forest saplings were distributed this year from MCAP's project nurseries in Sirdibas and Philim, with another 9463 saplings of eleven different species ready for distribution at the start of the new fiscal year.

Plantation sites across NTNC have a central role in minimizing forest pressure as well as meeting community's demand for timber, fuel wood and fodder. This being said, open grazing practices make it extremely difficult to protect saplings and young trees. To deal with this problem and to enable protection of plantation sites, support for the construction of 785 meters stone wall fence covering 2 hectares of barren land was undertaken in Pansingh village in MCAP region. Stone fencing installed by CAMC and mothers' group members focused on the plantation site's open periphery and entry gates to restrict animals. Following the construction of the site, 3221 saplings of different plant species produced at the MCAP's project nursery were planted. Majority of the saplings consisted of tree species of Utis *(Alnus nepalensis)* and fodder species of Bakaino *(Melia azedarach)* will now help relieve forest stress while meeting the community's domestic needs. Before this, MCAP extended similar support to Salleri and Philim with 630 meters of fencing wall on 3 hectares with 3085 saplings.

In addition to this, more than 400 households were supported with iron poles as an alternative to the wooden poles used by Buddhist households for prayer flags. The prayer flags that are generally replaced more than once a year will thus help save 1203 pole sized pipe trees annually from cutting. In this manner, both impact on the forest as well as on community's culture and traditions are maintained to complement one another.

Non-Timber Forest Product Diversification

Keeping with the enormous potential for non-timber forest product (NTFP) in MCAP region, NTFP farming can be an important source for diversifying income opportunities within the community. Lower parts of the MCA are especially suitable for farming of *Swertia chirayita* (locally known as *chiraito*) – a plant bearing medicinal properties. Recognizing this potential, MCAP supported in the establishment of a new chiraito nursery at Lokpa, in addition to upgrading the existing nursery at Aga. These supports will improve the production of seedlings and will increase income through sales.

1200 seedlings were supplied from the chiraito nurseries to keep with the increasing demand from local farmers. The nursery was set up as a part of the Hariyo Ban Program II, wherein support for nursery tools and equipment were also made. Other NTFP-related support extended this year also included the initiation of the plantation of Buddha Chitta plant *(Ziziphus budhensis)* (100) in Philim and Lokpa; *Napier pennisetum purpureum*



grass (4500); *Thysanolaena maxima* grass (2600); *Amomum subulatum* or black cardamom (5000 stumps, 2500 saplings).

Wildlife Monitoring

The Manaslu Conservation Area (MCA) location, topography, and bioclimatic zonation, biological and cultural aspects represents an incomparable opportunity for biodiversity conservation. The area encompasses favorable habitats for many protected and endangered animal species like snow leopard *(Panthera uncia)*, Himalayan Brown bear *(Ursus arctos)*, Gray wolf *(Canis lupus)*, Assamese monkey *(Macaca assamensis)* and Himalayan musk deer *(Moschus chrysogaster)*. In order to assess wildlife presence within MCA, wildlife monitoring was conducted this year within Tsum Valley wherein the valley was divided into 32 grids (5x5 km) with 24 cameras installed in each grid focusing on water holes and animal trails. Keeping with animals sign and movements – identified through pugmark, scat, and hoof print – 17 cameras were installed in 17 different locations. Beside camera installation, survey was also carried out for signs of wild animals within the pasture land to help better determine human-wildlife conflict scenarios. GPS location, altitude and location were recorded on each sign of wildlife presence. From the camera trapping four snow leopards were recorded, whereas other common sightings included those of Blue sheep, Jackal, Jharal, Marmot and *Daphne* besides other small creatures. All of this has been recorded and it is expected that the survey will inform future researchers in the region about the status and habitat conditions for many Himalayan wild animals that have a fundamental role in maintaining the ecosystem of the region.

Feral Dog Management

In order to explore possible control measures related to feral dogs problems in MCAP region, a workshop aimed at implementing actions to tackle the issue was organized this year at Sama of Tsum Nubri Rural Municipality. Insights shared during the workshop agreed that the problem of feral dogs had become burdening for 5-6 years. According to the local herders initially only few feral dogs had migrated from Tibet, but later their population had increased up to 65-70 spreading into 15 different packs across the region. The wild dogs are especially in high numbers in Sama, Samdo and Lho villages. Altogether 20 members from the community, mother groups and government representatives participated in the workshop. Feral dogs are seen as menace to the community as they often kill livestock calf like yak, sheep, goat, and even horses. Further they also prey on musk deer, blue sheep, and marmot species in the wild. The workshop recommended castration of the feral dogs which could be an effective intervention to control their growing population and menace.



Wildlife Monitoring and camera trapping survey conducted by MCAP is expected to inform future researchers in the region about the status and habitat conditions for many Himalayan wild animals that have a fundamental role in maintaining the ecosystem of the region

Local Adaptation Plan of Action (LAPA) Implementation

As a matter of extending climate change adaptation support to local communities, this year MCAP helped Pangsing mother group of Sirdibas with stone wall fencing for the plantation site. More than 512 meters of stone wall fence was constructed in the process focusing on the plantation site's open periphery and entry gates so that livestock are not able to encroach and destroy the plantations. Further the LAPA workshop in Bihi and Chumchet reviewed the biophysical, socio-economic and climate related attributes, with a special focus on incorporating emerging issues related to GESI (gender equality and social inclusion) and Governance for prioritization of the newly elected local bodies.

Improved Cooking Stove

Majority of households in MCAP region use traditional cooking stoves that have poor firewood efficiency. With the aim to reduce pressure on forests, MCAP has been supporting community households with metallic improved cooking stove (MICS) models from the Alternative Energy Promotion Center (AEPC). These MICSs are proven to not only consume less fuel wood, but they also serve as incredible alternatives for space heating, making them all the more valuable in the cold mountainous region. In addition to providing improved cooking stove to 473 households, MCAP will also help keep a check on smoke-related health hazards that are otherwise commonplace within the many communities who still adopt traditional cooking methods. Over the last five years MCAP has already distributed some 1200 stoves in the region.

Logging and Timber Management

For logging and timber preparation from the fell, dead and dying trees, MCAP supported CAMC Chumchet for the preparation of 459.28 cu.ft. (135 beams and 640 planks) of timber from fallen, dead and dying trees in Gumlung forest area wherein these were utilized for infrastructure-related reconstruction activities of the community.

Governance Awareness

A governance model that ensures transparency, accountability and participation is crucial in the effective management of local bodies as well as natural resources. With the aim to improve institutional capacity of natural resource management (NRM) groups within MCAP region, a one-day workshop was organized in each of the seven wards of Tsumnubri Rural Municipality for a total of 124 CAMC members and the recently elected local body representatives. In this process data was collected for further strengthening NRM capacity on the basis of established indicators to ensure greater community responsiveness. The workshops were focused to precisely build capacity of user groups to achieve equitable and sustainable impacts and to assess decision making and implementation systems of CAMCs. They were also very helpful in identifying some of the most pressing issues faced by CAMCs, especially during programme implementation, while at the same time building the grounds for better coordination among each other. Based on the institutional capacity assessment, out of the seven CAMCs in MCAP region, CAMC Lho and Siridibas were found to maintain an impressive performance. These were undertaken as part of the Hariyo Ban Programme.



AGRICULTURE AND LIVESTOCK DEVELOPMENT

Vegetable Seedling for Farmers

This year MCAP distributed a total of 3230 packets of twenty three varieties of vegetable seeds to about 500 local farmers in the region. In addition to this, 400 more households were provided with improved agriculture tool sets such as hoes, sprinklers, nozzles, watering can, loose pipe and plastic sheets to equip locals with best farming practices. By increasing access to such materials at reasonable price to local farmers in the region, MCAP ensures that their production capacity continues to share into their farming success

Livestock Restocking and Improvement

Following the Nepal earthquake in 2015 that had its epicenter in Gorkha, damage in the adjoining MCA was inevitable. As a consequence, the region's agricultural and animal husbandry – the main source of income of the local people – was severely impacted. The earthquake aftershocks

followed by landslide resulted in large counts of livestock fatalities along with damaging residential and community buildings. Thus, as a matter of priority, through the Hariyo Ban Program, MCAP extended reconstruction support of damaged sheds along with the task of restocking livestock. During this fiscal year alone 144 households were supported with the restocking of 422 livestock killed at different places through cash support of Rs 9500 per livestock in addition to the construction support for 31 goat sheds. Further with the aim to minimize human-wildlife conflict across the pasture lands, MCAP supported 90 livestock shed owners with portable solar lights. Many livestock herders who reside and operate mobile camp in the remote high reaches of the region, the solar lights will be a great source of light and safety, especially at nights from potential predators like snow leopards.

Apple Production

In spite of the ideal soil and climatic conditions for apples in MCAP region, the community lacks technical knowhow and skills for implementing best practices often resulting in poor production. Thus, in order to transfer scientific knowledge to local people and to capacitate them with necessary materials and tools, MCAP organized three apple-farming trainings for 70 participants in Bihi, Lhi and Chhekam. Each of the trainings comprised of both theoretical and practical sessions wherein major focus was put on implementing useful cutting techniques, regular pruning exercises,



and diseases and related control measures. The training jointly facilitated by Mr Bishnu Shrestha, Agricultural Officer from the District Agriculture Development Office, Gorkha, along with the MCAP staff is expected to further supplement the region's apple quality and yields in the coming days.

COMMUNITY INFRASTRUCTURE DEVELOPMENT

Livelihood Support through Cash for Work

The devastating Nepal earthquake in 2015 with its epicenter in Barpark, Gorkha had destroyed most of the trails and religious monuments in MCA. In response, the cash for work program was implemented under Hariyo Ban

Along with other infrastructure works, over 5000 meters of trails were constructed across various parts of MCAP through the cash for work programme undertaken as a response to support local people for livelihood by involving themselves in recovery and reconstruction work following the devastating Nepal earthquake

Work completed through cash for work

SN	VDC	Work	Quantity	Man Days	Remarks
1	Siridibas	Trail Improvement	220m	418	Philim main Trail stone pavements
2	Bihi	Kani repairs	1 no.	123	Bihi Kani Repairs
3	Lho	Trail Improvement	1813.6m	1897	Bharzam to Lihi trail (172.8 m), Nangsang Khola to Hinang Trail Repair and Maintenance (215.3 m), Limi trail (230.5 m), Khumlugumba to Dhumsum trail improvement (1195 m)
		Wooden Bridge	2 no.	138	Bharzam pari woodwen bridge and Hinang wooden bridge
		Shyo kani	1 no.	76	Shyo kani
4	Samagaun	Trail Improvement	592 m	875	Ghydo- Larke bazar trail repair (170 m), Sama kani to Nadunsung trail (122 m), Khamsung-Nandasung trail repair_stone pavement (300 m)
		Wooden bridge	3 no.	382	Namdong Khola wooden bridge, Sonam khola wooden bridge and Ghygo Wooden bridge
5	Chumchet	Gumba reconstruction	1 no.	175	Pekyap Gumba kaani reconstruction
6	Chhekampar	Trail Improvement	2323m	791	Pandung Phurbe Trail (880 m) and Chaurikharka - Gho trail (1443 m)
			183 m	212	Dry wall for Laar drinking water supply tank safety

Programme to support local people for livelihood through involving themselves in recovery and reconstruction work –damaged trails, wooden bridges, *kani, mahne, gumba* (monasteries) and other community infrastructures. The details of the work completed during this fiscal year period are given in the table below.

Disaster Risk Reduction (DRR)

Like other mountain regions of Nepal, MCA is also much susceptible to disasters induced by river-related hazards. During this year, MCAP supported CAMC Chumchet with 30 gabion sets to be installed for the protection of the Shakyu khola suspension bridge, along with construction of a check dam for the protection of the wooden bridge at Chiral khola to CAMC Bihi. Further, for the safety and improved hygiene of Namrung and Dhurjung villages, construction materials for drinking water supply like cements, pipe and other fittings was provided to CAMC Prok and CAMC Bihi. All of these will help MCAP to meet its goal of ensuring community rights to access of facilities that promise a disaster-free environment.

Improved Water Mill Distribution

Although large communities across MCAP region are engaged predominantly on agriculture, primitive methods are still very much in practice. Major crops grown are maize, wheat, buckwheat, millet and naked barley which also make their staple food. The cultivation of crops is monsoon-dependent, wherein community members continue to make use of traditional wooden wheels to operate the water mills. Given the limitations of these wooden wheels – which are time consuming as well as energy inefficient – as an alternative for improving water mill distribution to the community, MCAP supported with the installation of improved metallic disk wheel along with accessories. A total of six improved water mills installed this year will subsequently enable more than 200 households with better access to water supply for irrigation purposes, thus contributing to higher agricultural yields in the future.



SUSTAINABLE TOURISM DEVELOPMENT

Heritage Conservation

Gumbas (or monasteries) are centers for regular religious ceremonies and activities for many Buddhist communities in the high mountains of Nepal. They occupy a special place in shaping the cultures and traditions of the people, and are characterized by a deep reverence for nature. Given their spiritual significance to the community and environment, NTNC has been regularly extending support to such remote monastic institutions. This year, MCAP provided Chipu Gumba with more than 40 pieces of sheets to overcome its roofing problems. The intervention although seen as small, is expected to have a significant impact, especially for many people of Laar and Bhurji villages in Chhekampar who go to Chipu Gumba for their regular religious activities.

Eco-Tourism Promotion

Tourist preference for trekking in the MCA is seen to be increasing each year. Offering some exceptional landscapes for international trekkers, most of the tourists visit Tsum valley and climb up the Larke Pass. This being the case, there is still a sizable wanting in the infrastructure services and facilities for tourists trekking in the region. In the present context, there is only single trekking route from Tsum valley to Nubri valley whereby visitors are required to follow a single trail up and down. Again, due to the vast wilderness of the region and with very sparse hotel and accommodation facilities, most trekking routes within MCA are limited to camping groups. Thus, to diversify the benefit of

tourism income, MCAP has been studying various alternative routes and new tourism destinations within the area. Currently one feasible route has already been identified and developed in collaboration with local communities and government line agencies.

An example of missed tourism opportunities is seen in the Chumchet-Dhurjung-Rana trail – an area that although is full of natural beauty is not easily favored by tourists due to lack of hotels and other infrastructure. To redress this gap two workshops on need identification aimed at assessing the potential for developing homestay ecotourism services were organized in Dhurjung and Chumchet. A total of 33 locals were oriented in the process whereby 7 households from Chumchet and 5 households from Dhurjung have shown interest to operate the home stays. During the process awareness about meeting basic needs for tourism promotion was extended wherein MCAP will support 12 households in the future to meet their need for proper bedding, sanitation, toilet material and other homestay appliances. By diversifying the community's scope for economic opportunities, the homestay facilities will further promote trails linking Tsum valley with Manaslu Circuit trek that promises to be one of the best trekking routes for international trekkers.

CONSERVATAION EDUCATION AND EXTENSION

Scholarship Award

With the aim of improving local students' access and opportunities to basic education, especially focusing on those who are disadvantaged or orphans, talented but poor, MCAP has been providing some amount as student scholarship each year. During this fiscal year 45 students studying in different grades were awarded scholarship grants on the occasion of World Environment Day observed each year on June 5. Grants provided – at Rs. 3,000 each for primary students, Rs. 4,000 for lower secondary and Rs. 5,000 for secondary levels – will ensure that education continues to be pursued as an utmost priority for the future of many remote communities in the region.



By diversifying the community's scope for economic opportunities, the new homestay facilities in Dhurjung and Chumchet will further promote trails linking Tsum valley with Manaslu Circuit trek that promises to be one of the best trekking route for international trekkers

Special Events

Special events focused on marking community conservation, solidarity and resolve are celebrated each year throughout the NTNC. During this year four events took priority in the celebration in MCAP region bringing together scores of hundreds of community members, mother groups, students and teachers along with community leaders. Main events observed this year included celebrations related to: International Women's Day; Wildlife Week; World Environment Day; and World Tourism Day. Each special day having its own unique theme was marked with a recommitment to further the conservation purpose and prosperity of the region.

Publication

In order to reach out to the community in more meaningful ways, it is important that people intimately engage and exchange with the Project activities. To ensure information dissemination about our prorgrammes, this year 800 pieces of *Manaslu ko Serophero* (T: Surroundings of Manaslu) was published, besides brochures, maps, manuals, and information materials. These will help inform local community members and stakeholders about different activities and programmes concerning the Project and ensure its better integration and impact in the community.





Gaurishankar Conservation Area Project (GCAP)

Gaurishankar Conservation Area (GCA), the youngest conservation area in Nepal was declared as conservation area by a historic and special meeting of the Council of Ministers, Government of Nepal (GoN) held at Kalapatthar, base camp of the Mt. Everest on December 4, 2009. Spreads over an area of 2,179 sq. km covering 22 village development committees (VDCs) of Dolakha, Sindhupalchok and Ramechhap district, GCA is adjoined with Tibet Autonomous Region (TAR) of the Peoples' Republic of China to the north, Langtang National Park (LNP) to the west, Sagarmatha National Park (SNP) to the east and other districts of Nepal to the south. GCA is not only very rich in bio-diversity but also provides biological corridor connectivity to two crucial protected areas of the country, SNP and LNP.

GCA comprises 695 types of floral species and 16 major vegetation types: Pinus roxburghii forest, Schima-Castanopsis forest, Alnus forest, Pinus wallichiana forest, Pinus patula forest, Rhododendron forest, Quercus lanata forest, Lower temperate oak forest (Quercus semicarpifolia), Lower temperate mixed broad leaved forest, Abies forest, Upper temperate mixed forest (Birch-rhododendron forest), Temperate mountain oak forest, East Himalayan Oak forest, Juniperus forest, Shrubland (Rhododendron anthopogon bushes) and Moist alpine scrubs. Faunal diversity inside GCA totals to 71 species of mammals, 27 species of reptiles, 24 species of fishes, 12 species of amphibians, and 252 species of birds.

The region is quite rich in water resources and is catchment of Khimti, Bhotekoshi, Sunkoshi, and Tamakoshi rivers that are the major sources of water for some major hydropower projects in the country. The region is also famous for glacial lakes, particularly the Tso Rolpa. Glaciers account for 2.77 percent of the total area of the region. With the issue of climate change becoming prominent in the national and international arena, the region carries special significance.

GCA is the third conservation area entrusted to NTNC for management. NTNC started conservation and development establishing GCAP at Laduk as headquarters and visitors' information center at Singati and Siwalaya. In close collaboration with communities and government stakeholders, GCAP has been implementing programs based on holistic and integrated conservation and development program (ICDP) approach since 2010.

NATURAL RESOURCE CONSERVATION

Management Operational Plan Preparation

GCAP supported in the preparation and approval of 70 management operation plans for CAMCs and FMSCs that will act as a set of management guidelines for optimizing the use of community based forest resources

Management operation plans (OP) of CAMCs are community-owned documents that provide legal framework on the basis of which future conservation efforts are executed. These are technical documents necessary not just to enable sustainable utilization and conservation of natural resources within the conservation area, but also to guide its optimum utilization for the benefit of the local community. During the year 2016-17, GCAP helped prepare and approve a total of 21 management operational plans. In due process, series of meetings, workshops, and seminars were undertaken to prepare, verify and review the documents before its handover and application in the local community. In addition to these, GCAP also helped complete the preparation of management operation plans for all 49 FMSCs (Forest Management Sub-Committees) within its working area. FMSCs are formed to work under its related CAMC body, and are directly responsible to manage forest resources.

NTFP Harvesting Plan Preparation

Within its rich forest resources, GCA is provisioned with high value non-timber forest products (NTFPs). Some of the common species traded this year were *Uttis, Mahuwa, Lapsi, Paiyun, Patle Salla*. This being the case, a detailed assessment about the presence and status of NTFPs was not available. This year, to help assess NTFPs within the region, GCAP conducted a detailed study where after a NTFP harvesting plan was also prepared. In the process, three meetings were organized with local people involved in NTFP trade and collection, with technical resource survey and NTFP mapping. Besides determining the annual harvest capacity, the study will help inform natural resource managers support sustainable community practices for NTFP harvesting.



Nursery Operation and Plantation

In order to be a constant source for agro-forestry saplings/seedlings to the local community GCAP has been managing its own nursery so as to grow and supply varieties of forage and fodder species. This year, the project distributed a total of 192,452 saplings of various species of cash crops, along with timber, fodder and bio-engineering species to help reduce extensive use of forest resources. Saplings of species such as *Abies pindrow, Alnus nepalensis, Morus alba, Choerospondias axillaris, Atocarpus lakoocha, Arundinaria sp., Dendrocalamus sp., Sapindus mukorossi* (Rittha), *Thysanolaena maxima* (Broom grass) and many different NTFP species were distributed to the villagers interested in growing the tree/crop on their own community forests or private land. During this year, plantation in the project nursery in Singati included those of Amriso, Nigalo and Napier grass.

Forest Patrolling

Regular monitoring of forest areas is absolutely important to check the status of illegal activities such as hunting, poaching and illegal felling of trees. Patrolling efficiency is expected to be one of the main reasons why no illegal activities have been recorded within GCA in recent years. In last two years alone, a total of 42 forest patrols were undertaken with more than 400 people participating in these exercises. During this year, GCAP helped in conducting 12 forest patrols in joint coordination with CAMC executives, forest management sub-committees, Nepal Police, district forest office representatives (around the border area), and local people. All these will not just help deter illegal smuggling and wildlife trophy hunters, but also create ensure awareness

and promote solidarity for the conservation of the area's resources.

Initiative for Carbon Offsetting

An inception workshop on "Carbon offsetting as an opportunity for sustainable rural development in Nepal", a five-year project funded by the Carbon Offset System of the University of Natural Resources and Life Sciences (BOKU), Vienna, Austria was jointly organized by the NTNC, BOKU, Nepal Academy of Sciences and Technology (NAST) and Amrit Campus, Tribhuvan University (TU) in Charikot, Dolakha. The joint initiative aims to mainly establish structural and sustainable changes through pilot studies in Laduk and Bulung VDCs within Gaurishankar Conservation Area wherein the database and monitoring methods developed from the studies will form the baseline on evaluation of long-term effects of community based forest management upon ecosystem services. This will be a starting point for the carbon offset activities in mountain communities of Nepal.

Training for Illegal Wildlife Response

With a view to control illegal trade and wildlife poaching, series of trainings were organized during this fiscal year. These trainings were specifically targeted to Nepal Police personnel, boarder area armed police personnel and local youths – all of whom have an instrumental role in implementing conservation practices on-the-ground. About 400 participants from Dolakha, Ramechhap and Sindhupalchok districts were trained through well designed and structured sessions prepared by capable staffs from GCAP and GCA Liaison office. Altogether, 9 such trainings were organized out of which one training was targeted to journalists working in media in Dolakha. In the process, a new community based anti-poaching unit (CBAPU) was also formed in Shivalaya of Chuchure VDC. With this, it is expected not just to build enough capacity to tackle future illegal scenarios, but also ensure a strong and well-functioning network of line agencies, concerned stakeholders and local people to mitigate future problems.

Local level Coordination

One of the significant roles of GCAP is to ensure that the community are well versed and active in the conservation-driven practices. For this their constant involvement, sensitization and appraisal is needed. These help not just to enhance community purpose and performance but also help in guiding collective conservation goals for the area. Thus in order to develop efficiency in carrying out programmes of the project, some sixty meetings and workshops were organized with various community-led stakeholders throughout the year. These included those mainly from CAMCs, FMSCs and forest user groups, those who are at the heart of conservation activities for their respective communities. Moreover, such events give the project an opportunity to better understand whether or not their scope of actions are in line with the needs and expectations at the grassroots level.

To control illegal trade and wildlife poaching, about 400 participants from Dolakha, Ramechhap and Sindhupalchok districts were trained to build capacity to tackle future illegal scenarios and ensure a strong and well-functioning network of line agencies, concerned stakeholders and local people throughout GCAP region

ALTERNATIVE ENERGY

Improved Cooking Stove Distribution

Providing alternative measures to reduce stress in forest resources is necessary to ensure community practicability and responsiveness to our conservation endeavors. Thus in to order to reduce the dependence on firewood for cooking, measures such as improved cooking stoves (ICS) are promoted. In line with this, GCAP distributed stoves to 250 households during this fiscal year. Besides reducing stress on forests, these stoves minimize health hazards caused by excessive smoke from burning fuel wood. The stoves were purchased through a mutual cost-sharing arrangement between GCAP, the receiving households, and the existing government subsidy scheme, wherein technical supports for fixing and operating them were provided by the stove vendors. Further, during the installation, mass awareness was created among the community to encourage locals to opt for alternatives like solar and bio gas. As a result this will significantly impact their lives and the region's resources

Electrification and Micro Hydro Promotion

In order to economize rural micro hydro capacity and promote the use of electric iron poles in place

Besides causing enhanced awareness for action regarding stress caused to natural resources, GCAP has ensured that community traditional practices keep with cleaner energy access and more sustaining alternative approaches

of wooden poles for electrification, 11 wooden poles in Aalampu were replaced with iron poles. Traditionally, electric poles were raised with wooden poles harvested from the local forests wherein it was common place to find trees logged for this purpose. Consequently, the high mountain forests were severely stressed, which is steadily being brought under control. After replacement with iron poles, that are way more durable than wood, the case of cutting clean bole trees unchecked every year has been reconsidered by the community. In the process, one out-of- order micro hydro in Aalampu was also repaired to compliment the promotion of energy efficiency. Along with extending enhanced awareness among the local community regarding stress caused to natural resources, GCAP has ensured that the community's traditional practices keep with cleaner energy access and alternative approaches.

CONSERVATION EDUCATION AND EXTENSION

School Conservation Education

Mindful of the far-reaching impact of youth role in the future of conservation, GCAP continues to carry out its flagship conservation education and extension programme (CEEP) throughout the region. In the process the CEEP programme not only sensitizes young students towards nature, but also ensures that teachers, parents, peers and older people in the community are simultaneously led to act towards pro-conservation actions. During this year, GCAP carried out its conservation education programme across 10 schools reaching out to more than 2300 students. A total of 12 CEEP teachers were appointed in the process to partake and organize various activities in their respective schools. These schools are currently teaching conservation education based on the project designed textbook named *'Prakritiko Sandesh'* (T: Message from Nature) at the lower secondary level. Besides providing support for stationery and budget related to extra-curricular activities for the schools, GCAP also allocates budget for scholarships and grants to students, with a priority for meritorious, female and marginalized groups. In the past two years alone, more than 400 students have been given an opportunity to such grants and scholarships. The CEEP programme continues to be a successful programme for building leadership and mobilization among students for conservation initiatives since each of the schools have their own Green Force Clubs (GFC) that lead the conservation agendas in their respective schools.

The CEEP programme not only sensitizes young students towards nature, but also ensures that teachers, parents, peers and older people in the community are simultaneously led to act toward pro-conservation actions in response



Community Awareness Programme

Education and awareness raising is an ongoing process wherein frequent conservation programmes have to be carried out to keep local people updated and urged about growing problems and issues regarding conservation. In order to create awareness and encourage responsiveness, GCAP organized and initiated large number of activities throughout the year. These included school programmes organized on special days such as the World Environment Day, Wildlife Week, and International Women's Day among others. Besides school-related events, GCAP also conducted seven fire sensitization workshops and trainings for more than 250 local community members and two climate change trainings for 54 conservation education teachers. The issue of forest fires and climate change were given special focus this year, because of the region's frequency and vulnerability, wherein large tracts of biological resources suffer each year from uncontrolled forest fires, as well as due to the speeding impacts of climate change on the mountain community. Additionally, during these mass trainings, fire lines were constructed in some of the most fire-prone areas in Laduk, Bulung, Orang, Khare, Listikot, and Shyama. All these will undoubtedly build on the conservation targets of a more sound and resourced community at GCAP.

Community Outreach

GCAP understands the need to connect and engage community interest for conservation and simplify its meaning, message and merit. Keeping this in view, community radio is a proven medium for effective communication, especially in the remote regions of Gaurishankar. In order relay information out to the mass more effectively and widen its reach in the community, GCAP extended its popular '*Gaurishankar Darpan*' programme to four different stations located around the project area this year. Aired once every fortnight, it has certainly helped garner greater conservation knowledge and interest in the region. Likewise, Gaurishankar Darpan is also an annual publication of GCAP undertaken to disseminate and present conservation knowledge, information and facts among readers more appropriately. Published as a magazine by GCAP, it is more-or-less a review of the progress made in the previous year, accompanied by technical articles, essays, poems related to conservation aimed at building conservation literacy.

Special Events

Attracting mass participation, special events are highly effective for mass communication and thus are ideal platforms to related and reorganize community interest and response to conservation. To enhance conservation awareness and action among the local community, GCAP organized a total of 23 conservation events reaching out to some 5000 participants in total this year. These events covered activities related mostly to International Women's Day, Wildlife Week, and World Environment Day among others. During the special events participants were made to engage in flurry of activities, ranging from various campaigns and rallies, lectures and talk programmes, to various performing art exercises like street drama, dancing, singing, poetry and art, among many other creative forms of conservation-oriented activism. Engagements such as these are crucial for building collective solidarity among the community for the future of the region's conservation success.

Some 5000 participants that were reached through the various special events organized by GCAP throughout the year are crucial for building collective solidarity among the community for the future of the region's conservation success

Conservation Education Teacher Capacitating

Conservation education (CE) teachers have a distinct role in motivating youth participation in conservation. Since the students are more familiar with their teachers, it is more meaningful for teachers to connect with students. Thus it becomes necessary to ensure that the



corresponding CE teachers have appropriate knowledge and information about their assigned role and responsibility. To assess CE teachers' understanding as well as to train them and build capacity, GCAP conducted two special workshops for 33 conservation education teachers and principals of the schools within its area. Besides enhancing teacher capacity and their skill, the event also serves as a great opportunity to share and cross-learn among peers, as well as learn from varying issues, challenges and solutions experienced in the process. All this ensures that the CE teachers are ultimately reequipped to better deal with strengths and adversities in their task of being pivotal mediators of conservation.

CULTURAL HERITAGE CONSERVATION

Gumba Rehabilitation

Cultural resources have a vital role in promoting tourism besides natural resources. Bearing the essence of any given community, they help to keep alive the rich traditions of the past. This makes it increasingly important to not just focus on preserving culture, but also promoting them. During the Nepal earthquake of 2015, scores of cultural heritage sites were destroyed in GCA. In response, this year GCAP supported with the reconstruction and renovation of two more *gumba*s (monasteries) in Bigu and Gumdel. Besides this, prayer flags stands were also provided to 300 households of Listikot and Ghorthali, areas that have a predominantly Sherpa community. Prior to the iron poles, each of the households would use prayer flags made of clean tree boles. Replacing these wooden boles with iron poles will subsequently provide a long-lasting solution and help save at least 300 trees each year, thus reducing stress in forest significantly. Supporting the improvement and promotion of cultural diversity ultimately leads to enhanced tourism opportunities, resulting in maximizing benefits to the local community.



LIVELIHOOD IMPROVEMENT

COMMUNITY INFRASTRUCTURE DEVELOPMENT

CAMC Building Reconstruction

Following the Nepal earthquake in 2015, almost all of the office buildings in GCAP were damaged. To support in the construction and renovation of community (CAMC) office buildings, GCAP completed the reconstruction work in 4 CAMC buildings in Khare, Marbu, Chilankha and Bigu. CAMCs are conservation area management committees that are authorized to manage conservation related tasks in a given area. In addition, furniture support was further extended to nine CAMCs to ensure their proper institutional and administrative functioning.

Tourist Information Center and Check-Post Building

To increase the quality of services for tourists and to ensure their proper access to information services, facilitation and response, this year GCAP constructed a new Tourist Information and

Check-post Center in Shivalaya and Chuchure. The new facility has already deployed personnel from the Nepal police along with project staffs to regulate area activity and security. In addition, the check post will monitor illegal activities around the Eastern sector of the conservation area, thus keeping a close eye on potential wildlife misdoings. Besides surveillance, management of NTFP (non-timber forest product) exports from the area will be more efficient, whereas local people will also have better access to services. With this new addition GCAP has a total of three such facilities, out of which two are already in operational in Singhati and Nayapul. The check post in Shivalaya is expected to have a valuable presence, both for tourist facilitation as well as in wildlife monitoring and response as it is located in a bottleneck area.

Construction of Multipurpose Community Buildings

With financial support from the Gurung Society living in the United States of America, this year GCAP helped in the construction of two multipurpose community buildings in Marbu and Suri. Besides promoting the Gurung ethnic culture and their traditions, the new buildings will also serve as facilities for accommodating all other kinds of community-focused activities. Given the fact that most villages don't always have an opportunity to come together within a well facilitated means, this is seen as a much empowering initiative to enagage community unite them and build consensus about things that matter to them.

School Support Programme

Quality education in schools is directly dependent on adequate infrastructures. Considering this, GCAP supported 14 schools in the region to cope with their needs and demands for construction-related materials, classroom furniture, toilet utilities, and other necessary standards. With provision for these facilities intact, GCAP ensures that students continue to have access to minimum requirements for enabling quality education.



Drinking Water Support Programme

Although an increasing number of villages in GCA are provisioned with means to safe drinking water facilities, there is still an evident need to extend such facilities to more and more people. In this regard, new water sources require to be established in many places while existing water sources need to be continuously renovated. During this year, GCAP supported in the construction of three water tank facilities along with the installation of 10,800 meters of running pipe to further its drinking water programme. As a result thousands of households across Kalinchok, Orang, Chankhu, Ghorthali, and Laduk will now reap the direct benefits of easy and safe access to drinking water, making a huge difference in their daily lives – especially in matters related to their health, hygiene and sanitation.

With the installation of three new water tanks, along with the installation of 10,800 meters of running pipe, thousands of households across Kalinchok, Orang, Chankhu, Ghorthali, and Laduk will now reap the direct benefits of easy and safe access to drinking water, making a huge difference in their daily lives – especially in matters related to their health, hygiene and sanitation

HEALTH AND SANITATION

Community Health Support Programme

Although good health services is a fundamental right of the people of Nepal, many remote areas within GCAP have poor access to proper health facilities. In order to support for improved health services to the local community, GCAP provided 25 stretchers and basic medicines to various needy locations in Ghorthali, Shyama, Chuchure, Gumdel, Listikot, Chilankha and Kalinchok. In turn, this has



already delivered better health services to large groups of people, especially to women, children and the elderly.

Sanitary Model Toilet Support Program

Interventions for proper sanitation facilities this year involved the construction of 127 model toilets in GCAP region. Construction was carried out after conducting a detailed needs assessment of villages lacking access to latrines and proper sanitation. Most of the households supported were the marginal Dalit families in Khare, Listikot and Ghorthali. With proper sanitation in place, these families will now be able to keep with GCAPs immediate goals of making the region open-defecation free as well as aesthetically and hygienically sound.

AGRICULTURE AND LIVESTOCK DEVELOPMENT

Conservation Farmer Support

Conservation farmers are essentially natural environmental catalysts. They have a huge role in achieving the success of conservation efforts for any region since they influence other community members' behavior towards the use of modern and improved technologies in agriculture. In order to equip conservation farmers toward best practices, this year GCAP distributed a total of 117 greenhouse tunnels to farmers in Chilankha, Orang, Aalampu, Laduk, Marbu, Khare, Shyama, Gumdel, Chuchure, Marming, Listikot and Ghorthali. In the process, they were also trained in alternative crop farming practices, along with enhanced knowledge on modern techniques of agriculture. Through instilling a culture of reform and advancement in agriculture, GCAP ensures that its famers continue to serve as models for the rest of the community and lead conservation initiatives.

Income Generation for Conservation Farmers

Uplifting the capacity of farmers means to also fulfill their need for improved seeds, tools and equipment, while also regularly facilitating their training and development. Besides supporting 300 conservation farmers this year, GCAP also extended agriculture-related trainings to more than 500 locals. In the process, scores have now started using modern improved farming methods, showing great interest for improved and alternative crops (such as Cardamom, and *Arge*) against traditionally grown crops. For instance the distribution of 204,979 cardamom saplings in the past two years has enabled farmers to focus on high yielding cash crops that diversify their income levels. Likewise, the introduction of inter-cropping of forage species along with agricultural species has evidently contributed in reducing stress in forests.

Supporting 300 conservation farmers and extending agriculture-related trainings to more than 500 locals, this year GCAP has enabled scores to focus on improved farming practices and alternative high-yielding cash crops that diversify their income as well as reduce forest stress. All these ultimately ensure that both the farmer and the environment benefit together

TOURISM DEVELOPMENT

Trail Signposting

A well provisioned information system along the trekking routes is a necessary service for tourists within any protected area. They help tourists generate a sense of place – a sense of awareness, safety and reliability of the landscape they are in. Following from the previous year, a total of 68 information boards and 25 sign posts were installed in various trekking routes and minor trails within GCA. With the trekking routes being much better marked, it enables the region to serve its tourists with better guidance and direction. As a matter of fact, many tourists have already expressed positive views in the trekking trails from Jiri to Deurali and also to Rolwaling – some of the popular trekking routes where the signposts were installed.

Trekking Route Improvement

Proper trail systems and trekking routes are vital lifelines to keep with the tourism potential of the GCA. They fulfill basic requirements for infrastructure as well as help in promoting ecotourism along with opportunities for livelihood diversification within the community. After the devastating earthquake of 2015, many trekking trails were damaged. Thus to reconstruct the damaged trails and to maintain existing major trekking routes this year, GCAP supported in the development of six trekking routes in the area. These covered trails spread in Gaurishankar (Tashinam), Lamabagar, Shivalaya-Deurali (Chuchure), Gumdel, Marbu and Listikot. With the construction and maintenance of these trails, trekkers will have improved access and means to a more fulfilled experience.

Solid Waste Management

Proper waste and garbage management are among the most pressing problems in the mountain regions of Nepal. Given these regions are sparsely populated over huge areas with fragile ecosystems, they are often vulnerable to severe environmental degradation. Moreover since these





regions are host to large tourists and visitors, having a proper waste management system in place is not easy. To minimize this problem, during this year GCAP helped various communities located in tourist-heavy areas with 12 incinerators along with 170 dustbins. Further, various waste management workshops and cleaning campaigns were also organized to raise awareness among the local bazaar residents about waste collection and disposal mechanisms. Although there is much more to do in respect to the effective management of waste from the settlement areas, GCAP continues to collaborate with local communities to fill the gaps and work for a cleaner and greener environment.



Besides other promotional activities, two special documentaries bringing to light the socio-cultural features, natural beauty, and wildlife attributes of the Gaurishankar area were produced for attracting future exploration among both tourists as well as researchers

Tourism Coordination Meeting

Throughout the year, GCAP engaged with tourism-related stakeholders in wide rounds of coordination meetings and workshops. These included extensive discussion about planning and review, alternative approaches and actions for developing tourism in the region whilst encouraging local entrepreneurs to enhance eco-tourism products. Besides tourism entrepreneurs, coordination was maintained with District Development Committees, Trekking Agencies' Association of Nepal (TAAN) and Hotel Association of Nepal (HAN) and CAMC members.

Tourism Promotion

In order to promote tourism within GCA and to inform outsiders about the outdoor potential and wonders of the region, GCAP produced two special documentaries this year – one about the marvels of the *Rolwalling* landscape, eliciting the details of the travel experience from *Chhyotchhyot to Tsho-Rolpa*; and another covering the natural, cultural, historical and scenic beauty of upper Sindhupalchowk area. Both documentaries successfully bring to light the socio-cultural features, natural beauty, and wildlife attributes of the area, creating much interest for future exploration among both tourists as well as researchers. Besides this, promotion materials extended also included the distribution of 10,000 brochures to enhance coverage of the area, along with the distribution of maps, information sheets, notice boards, leaflets and booklets for invigorating tourist's knowhow and interest.

CAPACITY BUILDING

Skill Development Training

This year GCAP organized a total of 33 trainings and workshops reaching out to more than 1700 community members and stakeholders who were actively involved in the area's conservation success. Participants in these trainings comprised mostly of CAMC members, FMSC members, conservation/cardamom farmers, forest guards, security personnel, CE teachers, media personnel and GCAP staff. A majority of this year's trainings were focused on security personnel mentorship aimed at controlling wildlife crime. Besides enabling mentorship guidance and skills diversification, these trainings also act as excellent opportunities to understand and collaborate with the conservation stakeholders meaningfully to strengthen relationship and resolution.

RESEARCH AND MONITORING

Research Grant

In order to support conservation researchers, this year GCAP provided dissertation support to one student. The grant was awarded to a female student who undertook her dissertation concerning the ecosystem services around Singati Khola. Besides supporting her own academic needs, the research will help inform GCAP with better resource management practices and continue to inspire knowhow and advancement in the related field.

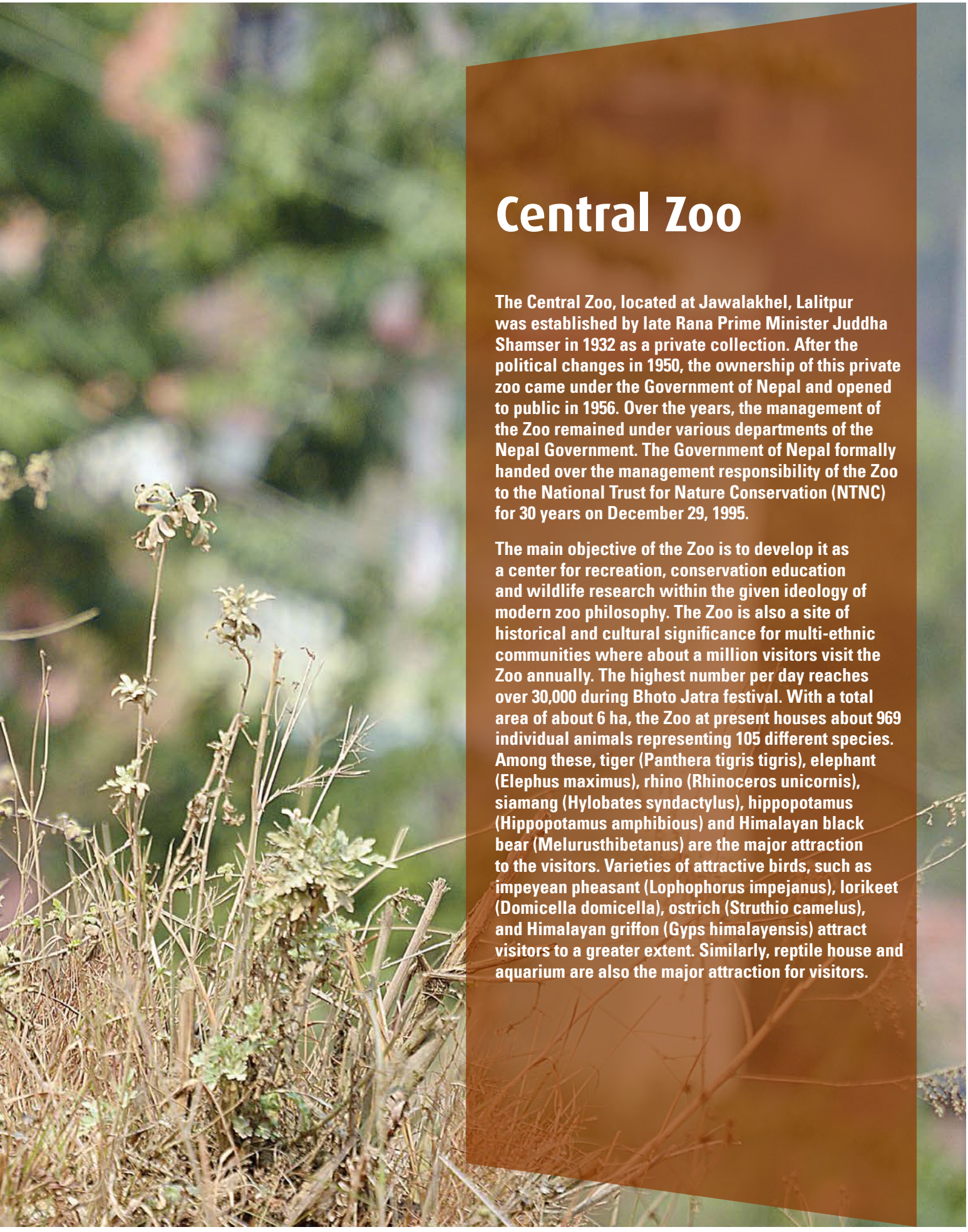
Reconnaissance Survey of Snow Leopard and monitoring of Nepalese Minnow

Keeping with the research potential at NTNC, this year two dedicated researches were conducted in GCA concerning snow leopard and Himalayan minnow (an endemic fish species of Nepal). A reconnaissance survey of snow leopard and its prey distribution was undertaken during the second week of August to further mountain



biodiversity research in GCA region – an area that has tremendous potential for further research exploration. Samples collected during the survey included scats, furs and pugmarks wherein common prey species found during the study included Ghoral, Jharal, Thar, Barking Deer, porcupine and game birds. Along with these some small cats/felids, arctic foxes and unknown species were also recorded. Likewise, GCAP technicians also monitored and recorded various breeding sites of the Himalayan minnow (locally known as *Tite Machha*) around the Tamakoshi river and its tributaries.





Central Zoo

The Central Zoo, located at Jawalakhel, Lalitpur was established by late Rana Prime Minister Juddha Shamser in 1932 as a private collection. After the political changes in 1950, the ownership of this private zoo came under the Government of Nepal and opened to public in 1956. Over the years, the management of the Zoo remained under various departments of the Nepal Government. The Government of Nepal formally handed over the management responsibility of the Zoo to the National Trust for Nature Conservation (NTNC) for 30 years on December 29, 1995.

The main objective of the Zoo is to develop it as a center for recreation, conservation education and wildlife research within the given ideology of modern zoo philosophy. The Zoo is also a site of historical and cultural significance for multi-ethnic communities where about a million visitors visit the Zoo annually. The highest number per day reaches over 30,000 during Bhoto Jatra festival. With a total area of about 6 ha, the Zoo at present houses about 969 individual animals representing 105 different species. Among these, tiger (Panthera tigris tigris), elephant (Elephus maximus), rhino (Rhinoceros unicornis), siamang (Hylobates syndactylus), hippopotamus (Hippopotamus amphibious) and Himalayan black bear (Melurusthibetanus) are the major attraction to the visitors. Varieties of attractive birds, such as impeyean pheasant (Lophophorus impejanus), lorikeet (Domicella domicella), ostrich (Struthio camelus), and Himalayan griffon (Gyps himalayensis) attract visitors to a greater extent. Similarly, reptile house and aquarium are also the major attraction for visitors.

CONSERVATION EDUCATION

Public School Engagement

Central zoo recognizes the value and opportunity to relate to its visitors to make them understand that ecosystem and wildlife services are indispensable for human wellbeing. As educators, we understand the value of building a connection between people and wildlife

The conservation education programme at Central zoo is guided by the 'access for all' principle. With the commitment that financial shortcomings should in no sense come in the way of learning opportunities for children, free membership and dedicated programmes are designed for targeted groups like government schools and disabled and orphan children with incentives to take part in the collective action for strengthening conservation awareness and impact. Free membership was provided to 500 students from government schools. FoZ members will thus have free access to the zoo, while also being actively involved in its various activities that run throughout the year. Another 36 orphan children also benefitted from a similar arrangement, whereas 35 disabled children were provided with special zoo guided tour and talk programme opportunities aimed at raising awareness and kinship for animals. Further incentives provided to schools also included support for sports and stationery materials, among others. Programmes like these encourage young children to aspire to conservation understanding and action, an aspect that the Zoo is particularly committed toward.

Global Day Celebrations

Central zoo, along with FOZ school students, regularly observes special conservation related days as part of the drive to expand conservation awareness and response. Two notable special events celebrated during this year included: the Global Tiger Day on July 29, 2016 and the World Elephant Day on August 12, 2016. The special events were participated by more than 2000 students who were involved in talk programmes, along with feeding, fun and other creative activities.



Natural History Museum Exposure

66 FOZ members from 32 different schools were taken on a one-day tour to the natural history museum, located near the world heritage site of Swayambhunath in Kathmandu. Given the museum's extensive collection of flora and fauna over more than four decades (more than 50,000 specimens) and the important role it continues to have on animal conservation, the tour was undertaken to get a clearer picture about the existence, evolution, and science of living beings – about why and how some species exist or have become extinct. Observation of vast specimens, techniques for conservation and preservation of species, the science of taxidermy, along with insight on evolutionary history were experienced in the process. It is expected that the tour will motivate students to better think and link the relationships between nature, animals and conservation.

Night-Guided Tour

This year, more than 1000 students and teachers participated in the annual night-guided tour at the Central Zoo. The guided programme is undertaken to help students observe the differing behaviors and personalities of nocturnal animals. Educators offer a special presentation to the students and guided them to meet some of the animals up-close. Students are taken to this popular programme every year and they see it as a perfect way to mingle science education with fun.

Animal Feeding

'Feeding programmes' are undertaken to provide visitors with an experience for education,

conservation and recreation together. Besides being an excellent opportunity for visitors to understand animal behavior first-hand, it aims at using a variety of feeding techniques to enrich the lives of captive animals as well as making visitors more compassionate towards animals. More than 2000 FOZ students from 35 different schools took part in this year's programme. Under the guidance of the zoo keepers FOZ members had to prepare and offer food to the captive animals with their own hands. This kind of experience enables visitors to widen their understanding about animal behavior and their diet, as well as helps build human-wildlife companionship.

Exposure Tours

To experience the beauty of nature as it is, raw and wild, it is necessary to impart learning opportunities that enhance knowhow and experience of the wild. This is true not only for grown-ups but also for young children whose affinity to nature has to be nurtured. Keeping with the aim of 'greening young minds', this year FOZ members from 20 schools were taken for such exposure visits in the Chitwan National Park in Sauraha and to the Annapurna Conservation Area Project in Ghandruk. Similarly FOZ coordinators from 14 other schools visited the Bardia National Park. Focused on better understanding of in-situ conservation models, the coordinators were guided to observe the Bardia Conservation Programme run by NTNC. FOZ coordinators are school teachers who have a major role in the success of implementing conservation education among young children. Such visits help provide insight on improved knowledge about protected area management systems, in-situ conservation, concept of buffer zone, and interaction with local school.

An excursion trip for 48 FOZ members from 21 different schools was also undertaken to the National Botanical Garden, Godavari to raise awareness about the different varieties of plants and its role in scientific research, conservation and education. During the same event, participants also visited the Fisheries Research Division and



Knowledge Park managed by ICIMOD, where they received practical understanding of different kinds of fishes and their habitat, including information on plants and different technologies of farming and other practices useful for sustainable development.

Solid Waste Management

A majority of FOZ schools are plastic free wherein the FOZ clubs take the lead for ensuring school cleanliness. Although the agenda for environmental protection has gained considerable prominence lately, practices related to basic concepts of waste disposal are often neglected. Lack of public awareness and apathy, coupled with poor waste disposal management is seen as a major cause for environmental degradation. Taking stock of this issue, this year solid waste management trainings were conducted for more than 500 FOZ members. During the training, students were made aware of the benefits of the '3R principle' (reduce, reuse and recycle) along with conducting waste auditing practical sessions involving collection, identification and segregation of waste into different categories (organic and inorganic). In addition, pile composting of organic waste at the Central Zoo and its use in home gardening was also demonstrated. Knowledge gathered from these trainings will ensure that students not just prioritize personal hygiene but also continue to lead environmental hygiene. FOZ members have already started engaging in compost preparation and craft-making exercises based on the principle of solid waste management

In our mission to create a plastic free environment in all of the FOZ schools, solid waste management trainings were conducted for more than 500 FOZ members this year. Knowledge gathered from these trainings will ensure that students not just prioritize personal hygiene but also continue to take the lead toward environmental hygiene

techniques. Often, schools are encouraged to engage one another and find simple and creative solutions for managing waste themselves.

Wildlife Week Celebration

The National Wildlife Week is celebrated every first week of the Nepali New Year bringing youths, local community, conservationists and nature lovers from all walks of life together with the objective of generating awareness, solidarity and resolve for wildlife conservation. Celebrated under the theme, "Youth in Conservation", the 22nd national wildlife week was marked with various activities designed to keep wildlife conservation related agendas at the forefront of public discourse. Implemented every year under the leadership of Department of National Parks and Wildlife Conservation (DNPWC), jointly with NTNC and other conservation partners, a special poem competition was organized at the Central-Zoo among 34 FOZ students on April 18, 2017. Celebrations commenced on April 14 with a national address by the Honorable Minister for Forests and Soil Conservation, followed by a week-long schedule from outdoor excursions, art and fun events, to publications, educational and media outreach programmes aimed at strengthening public commitment for conservation at the start of a fresh new year in Nepal.



Day with a Vet

The 'Day with a Vet' programme is meant to directly involve FOZ students with captive animals in a role-play as a veterinarian. The event involves providing information on zoonotic diseases, vet duties and how captive animals are managed at the zoo. This year some 500 FOZ students participated in the month-long programme wherein Zoo FOZ members together with Zoo veterinarians conducted physical examination of small animals like rabbits, by recording their temperature and heart-beat rate, along with conducting general health checkups. The unique experience provides a great opportunity to sensitize FOZ members about medical care procedures involved in the nurturing of captive animals.



Knowledge Management

Continuously raising conservation awareness and advocating solutions on existing threats and vulnerabilities is an underlying component of the zoo. The tragic Nepal Earthquake in 2015 was a wakeup call for all of the country to ensure compatibility with the natural environment. Further it was established that not only was there a necessity in reviewing building techniques and methods, but that there was also a general lack of public awareness in responding to the crisis. Thus, a special knowledge management talk programme on earthquake safety was organized for 66 students from 32 schools this year. Conducted by seismologist Mr. Mukunda Bhattarai, the session focused mostly on providing practical safety techniques targeted at disaster mitigation

measures. Through the session students were made aware as to why Nepal is an earthquake-prone country, with clear insight of seismological graphs and trends in the form of pictures.

Climate Change Awarenes

Climate change (CC) being at the helm of environmental issues, various activities were undertaken to sensitize about the severity of the issue among the FOZ students. Some 400 students were made aware about the impacts of the CC, and subsequent measures for improving adaptive capacity, and reducing overall vulnerability. Scientific evidences and data were presented in creative ways, followed by an interactive session where student proactiveness was very impressive. In response to this initiative, numerous schools have advised positively about our CC sensitization session.

Programme for Buffer Zone Schools

Starting from this year, the Central Zoo has extended its conservation awareness programme to schools in the buffer zone area of Shivapuri Nagarjun National Park (SNNP). Undertaken to encourage buffer zone schools students to participate and support our conservation education program, various incentives were provided and activities were conducted throughout the year. These included: free FOZ membership provided to 500 students from the five buffer zone schools (Budanilkantha Vidya Ashram, Nagarjun Madhyamik Vidhyalaya, Purnano Guheshwori Madhyamik Vidhyalaya,Nagarjun Thulagaun High School, and Jitpur Madhyamik Vidhyalaya); an essay competition among 35 finalists on the occasion of World Environment Day with a theme on 'Challenges in Conservation of Wildlife in Buffer Zone Area'; an awareness programme on solid waste management which also involved – distributing segregation bins to help schools properly manage organic and inorganic waste, training on innovative craft techniques to economize waste, setting up organic farms inside school premises, and making plastic-free environments in these schools. Furthermore, we expect that membership of these schools into the FOZ bandwagon will bring greater conservation consciousness among the larger community of the National Park area.

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Special Events

Nature and wildlife lovers from varying walks of life gathered on December 29, 2016 to mark





From painting to poetry to other creative competitions, international visits to outdoor excursions, special activities are undertaken through out the year to ensure that youth passion is able to thrive and flourish across our conservation initiatives

the 21st Anniversary of the Central-Zoo since being under NTNC's management. The Chief Guest was the Minister for Forests and Soil Conservation (MoFSC) and Chairperson of NTNC who inaugurated the annual celebrations. On the occasion, inter-school FOZ basketball tournament was organized along with a variety of fun games and entertaining events. Among the standouts during this year's celebrations was the unveiling of the book named *Prakriti ko Geet* (T: Songs from Nature) – a collection of poems recited by 16 senior poets.

Similarly, the World Environment Day celebration on June 5, 2017 saw the coming together of more than 3200 participants at the Central-Zoo. Jointly organized by the conservation partners—Lalitpur Metropolitan, NTNC, IUCN, WWF Nepal and BCN—participants at the event consisted mostly of schools students and teachers from over 50 schools from the 'Friends of Zoo' network (FoZ). Special guests at the event included the reputed Culture Expert and Littérateur - Mr. Satya Mohan Joshi, along with the Mayor of Lalitpur Municipality - Mr. Chiri Babu Maharjan who oversaw the distribution of prizes to children. Other prominent personalities at the event also included Miss Nepal 2017 and NTNC Biodiversity Conservation Ambassador, Ms. Nikita Chandak (along with Miss Nepal Asia Pacific Ms. Sahara Basnet) who administered the mass oath-taking pledge aimed at building collective commitment to enrich the country's spirit for nature, culture and biodiversity. Celebrated under the theme 'Connecting People with Nature', a calling on all to revive the ancient valley of Kathmandu's rich cultural and environmental assets was maintained.

Media Education

Keeping in mind the decisive role that media has on raising awareness and response, 15 prominent journalists from fourteen media houses were invited for a press meet accompanied by the Elephant Feeding Programme. Others accompanying the event also included representatives from IUCN, WWF Nepal, BCN and FOZ teacher's committee. An introductory orientation about the Central Zoo and its activities were shared with the guests, after which a Q&A session was facilitated by NTNC staff and FOZ Teacher's committee advisor. Beside information dissemination and exchange, such efforts help us to reach out to those who have the ability to make a difference for a cause that matters.

Art for Global Snow Leopard

Delegates from twelve countries gathered in Kathmandu to prepare the agenda for the Global Snow Leopard and Ecosystem Protection (GSLEP) conference to be held in Kazakhstan in mid-2017. To this end, a special inter-school FOZ drawing competition was organized between 34 FOZ

members from 13 different schools, wherein student creations were presented as a token of solidarity and appreciation to the ministers and delegates of the guest countries. GSLEP is a joint initiation of the civil societies and the international and private organizations from twelve countries where the snow leopard is found, in: Nepal, Afghanistan, Bhutan, China, Kazakhstan, Kyrgyzstan, India, Mongolia, Russia, Pakistan, Tajikistan and Uzbekistan. Its goal is to protect the natural habitat of the snow leopard.

ANIMAL MANAGEMENT

Zoo for In-Situ Conservation

Koshi Tappu Wildlife Reserve is the only habitat of wild water buffalo *(Arna)* in Nepal where an estimated 432 animals are found in the grasslands. Due to this, they face a severe threat of extinction. Thus with an effort to establish a second population of wild water buffalo outside Koshi Tappu Wildlife Reserve, one male and two female wild water buffaloes were translocated from the Central Zoo to Chitwan National Park in a national prioritized translocation. The translocation will help establish a second viable population in Chitwan National Park thereby reducing the risk of extinction and help increase their numbers.

Animal Treatment

Throughout the year, canine, feline and hoof stocks were vaccinated against the threat of viral diseases, wherein all of the zoo animals were dewormed twice a year. The ill and injured, as well as refugee and problematic animals were treated accordingly. Provision for medicines and other health-related interventions ensure that animals at the zoo are well nurtured.

Nursery and Quarantine Management

Different animals like barking deer, one-horned rhino, red panda, jackal, common leopard, red giant flying squirrel, Himalayan palm civet, Burmese ferret badger, rabbits, different birds such as budgerigar, Eurasian eagle owl, common peafowl, golden pheasant, lady Amherst pheasant and Peach Faced Love bird were successfully raised at the nursery before being kept for exhibit at the zoo. Similarly, sick, injured and weak animals of the Zoo were brought to nursery for treatment and proper care.

Enrichment Activities

A variety of plant species were planted inside and outside the reptile's house to enrich the enclosure. Wooden nest boxes for the birds were kept in section 4 of the zoo, wherein wooden logs and branches for birds were kept inside the enclosure. The wooden platform for common leopards, Himalayan black bear, sloth bear, siamang and small mammals were also installed inside the enclosures. Likewise cotton ropes for the primates were replaced with the new ones. All of this will ensure that the animals exhibited at the zoo are appropriately facilitated within the zoo environment.

Animal Rescue

Central Zoo has a major role in animal rescue operations undertaken across the country, especially from areas around the Kathmandu Valley. Interventions often arise due to numerous causes: from critical animal health, loss of habitat, illegal activities, etc. A total of 319 animals were rescued this year (Mammals: 33, Reptiles: 4,

Central Zoo has a major role in animal rescue operations undertaken across the country, especially from areas around the Kathmandu Valley. A total of 319 animals were rescued this year, following from cases related to critical animal health, loss of habitat, illegal activities, among others





Birds: 279, Fish: 3). Once brought to the Zoo, the animals are kept in the Zoo quarantine facility for observation and treated as per need, before further action is taken for their release, return or holding. Among others, rescue operations undertaken this year involved four Common leopard cases (2 were released into the wild, whereas 2 resulted in quarantine deaths). An injured Barking deer, and a Himalayan griffon was also brought from Bhaktapur, whereas another Black kite that was brought from British Embassy was treated in Animal Hospital of the Central Zoo for a week and then released.

Birth and Hatch

The resident Common langur gave birth to one baby. Another Jungle cat also gave birth to one kitten and is presently separated from the rest of the group to protect the kitten from the other males which is a very common cannibalism trait in the cat family. Three chicks of Rudy shell duck (*Tadorna ferruginea*) hatched in the aviary. Similarly Nepali pheasant (*Lophura leucomelanos*), silver pheasant (*Lophura nycthemera*), golden pheasant (*Chrysolophus pictus*) also hatched. Among the mammals, the resident Indian crested porcupine (*Hystrix indica)* gave birth to two Porcupettes which is presently an added attraction at the zoo. Being nocturnal in behavior, it is rare to sight them being parented during the day. Other birth cases consisted of Barking deer (*Muntiacus muntjak*), Spotted deer (*Axis axis*) and Black buck (*Antilope cervicapra*).

INFRASTRUCTURE DEVELOPMENT AND VISITOR FACILITY

Continually developing infrastructure facilities that compliment visitors' experience with nature and wildlife are extremely important. This year,



a reverse osmosis water filtration system was installed to upgrade visitor facility for ready access to cleaner and safer drinking water inside the zoo premises. Further a water hydrant system installed in the tiger enclosure will equip the zoo to chase and professionally handle tigers during potential accident scenarios. As part of providing better housing to its animals, another aviary was constructed which will enable convenient space for the pheasant species. Additionally, a new office building and the inner compound wall of the office premises has been constructed to replace the previous facility damaged due to the 2015 earthquake.

CAPACITY DEVELOPMENT

Exposure Visit to Out-of-Country Zoo

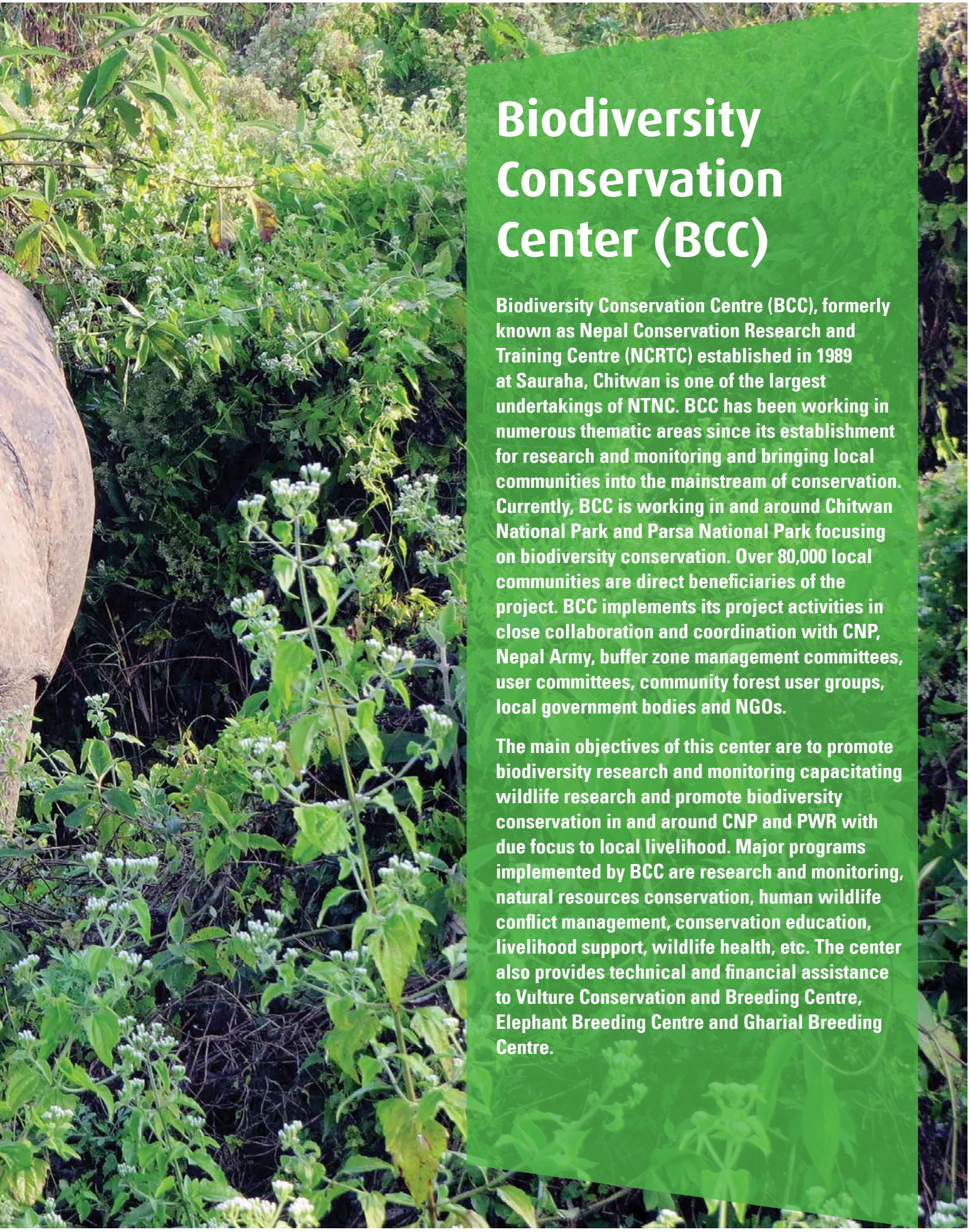
A team of 10 staff from different section of Central Zoo and 5 staff from NTNC's Central Office visited Padmaja Naidu Himalayan Zoological Park. The main objective of the visit was to explore opportunities for cross learning as well as enhance exposure on overall zoo management to the staff. Likewise, in order to explore and learn about the overall management of zoo, three senior staffs from Central zoo visited the Sri Chamarajendra Zoological Garden, Mysore Zoo, and the Mumbai Zoo, simultaneously also explored the conservation initiative of the Tilari Biodiversity Center in Goa. They successfully explored the various aspects of the overall zoo management, visitor service, animal enrichment for effective breeding, and aspects related to beautifying the facility.

Through the staff exposure visits, the Central zoo team were able to get quality insight and techniques related to overall zoo management, animal enrichment for effective breeding, animal information record keeping system, visitor services, and aspects related to facility beautification

Capacity Enhancement and Team Building

The Central Zoo operates twenty four hours and 365 days a year. Recognizing the need for consistent motivation and nurturing positive attitudes among our staff, training for all the 64 staffs at the Central Zoo was undertaken this year focusing on their exposure, communication building potentials and on strengthening team work. The training was organized in two different sessions on 28th-29th May and 8th-9th June 2017. Capacity building being evidence of strengthening the performance of individuals, organizations, and systems, these are expected to ultimately have a major impact towards animal management, their care and nurturing.





Biodiversity Conservation Center (BCC)

Biodiversity Conservation Centre (BCC), formerly known as Nepal Conservation Research and Training Centre (NCRTC) established in 1989 at Sauraha, Chitwan is one of the largest undertakings of NTNC. BCC has been working in numerous thematic areas since its establishment for research and monitoring and bringing local communities into the mainstream of conservation. Currently, BCC is working in and around Chitwan National Park and Parsa National Park focusing on biodiversity conservation. Over 80,000 local communities are direct beneficiaries of the project. BCC implements its project activities in close collaboration and coordination with CNP, Nepal Army, buffer zone management committees, user committees, community forest user groups, local government bodies and NGOs.

The main objectives of this center are to promote biodiversity research and monitoring capacitating wildlife research and promote biodiversity conservation in and around CNP and PWR with due focus to local livelihood. Major programs implemented by BCC are research and monitoring, natural resources conservation, human wildlife conflict management, conservation education, livelihood support, wildlife health, etc. The center also provides technical and financial assistance to Vulture Conservation and Breeding Centre, Elephant Breeding Centre and Gharial Breeding Centre.

WILDLIFE RESEARCH AND MONITORING PROGRAMME

Rhino Translocation

Within the next three years, a total of thirty rhino reintroductions have been planned from Chitwan National Park to Bardia National Park and Shuklaphanta National Park, wherein between 2016 and 2017, thirteen rhinos have already been translocated

With the aim of establishing viable rhinoceros populations in Bardia and Shuklaphnata National Parks the government of Nepal approved to translocate 20 rhinoceros from Chitwan National Park. A total of five rhinoceros were translocated in Babai valley of Bardia National Park in 2016. While additional eight rhinoceros were translocated from CNP in 2017, of which five (4 F & 1M) were released in Shuklaphanta and three (2 F & 1 M) in Babai valley of BNP. NTNC provided partial technical and financial support on this endeavor. The reintroduced rhinoceros are being regularly monitored by the wildlife technicians of NTNC and park Rangers. Rhino translocation in Nepal started from 1986, wherein to-date a total of 100 rhinos have already been translocated to BNP and SNP



Arna Translocation

Over the past century, *Arnas* (Wild Water Buffaloes) have been among the most vulnerable animals due to overexploitation and habitat loss resulting from anthropogenic pressure. In Nepal, Koshi-tappu Wildlife Reserve remains the only habitat for these animals with an estimated population of 432 (as of 2016). Surviving in a fragmented habitat, they are in constant threat of being extinct from Nepal if natural calamities such as flood, fire and epidemics were to occur. To establish a second ecologically viable population of the highly vulnerable species, a total of 15 Arnas were translocated to the Chitwan National Park between January 23 and February 6, 2017 (12 from KTWR; 3 from Central-Zoo). The past experience of NTNC remained very helpful for making the translocation a success.

The translocated *Arnas* are being kept in a 30 ha enclosure inside the Chitwan National Park at Padampur to allow them to settle in the new habitat and to increase their population. Some additional *Arnas* will be translocated from Koshi Tappu in the coming years and once their population is over 50 individuals, the enclosure will be removed so as to allow them to roam in the Chitwan National Park. The USAID funded Hariyo Ban Program provided financial support for the whole operation.

Fishing Cat Survey in Koshi Tappu Wildlife Reserve

Over the last decade fishing cat population continue to be threatened by destruction of wetlands. There has been considerable damage on riparian and wetland habitats mainly due to large scale illegal grazing of domestic livestock. To study the situation of fishing cat in Koshi Tappu Wildlife Reserve (KTWR), their population and density, and subsequently develop a fishing cat conservation strategy NTNC undertook a dedicated survey between September and December 2016 with the support from the Taronga Foundation, Australia. The survey involved major tasks related to camera trapping, questionnaire surveys along with other awareness programmes. Before installing the camera traps, a questionnaire survey was conducted with 51 fish pond owners about the fishing cat status and loss on fish farms caused by them. Based on questionnaire survey, fish ponds were stratified into two categories: (1) ponds reporting loss from fishing cat (conflict), and (2) ponds not reporting any loss from fishing cat. Ten fish ponds within each category were selected randomly. Out of the 20 fish ponds surveyed, only 16 ponds were able to camera trap the cat. Besides this, 500 fishing cat conservation posters were distributed, along with reaching out to 937



school students and 49 community members directly with conservation awareness message. A scientific journal article based on the related camera trap survey is planned in the near future, with preliminary findings indicating that:

a. Fishing cats are intensively using the private fish ponds and these ponds have a large contribution to the fishing cat population in Koshi.

b. Level of awareness about the species among the fish farming community is quite low. Awareness among fish farming community is required in short term to avoid persecution. In long term, loss of fish farmers from the fishing cats need to be quantified and compensation mechanism should be established to gain their regular support for fishing cat conservation.

c. A detailed study of fishing cats and their dependency in fish ponds is required. A satellite radio collared study could reveal the spatial and temporal use pattern of core areas and fish ponds (buffer zone) habitats.

Tiger and Prey-base Monitoring in Parsa

The National Tiger Recovery Plan (NTRP) 2010 endorsed and implemented by the Government of Nepal has recommended for annual assessment of tigers in protected areas with small populations like in Parsa National Park (PNP), Banke National Park (BaNP) and Suklaphanta National Park (SuNP). In line with this strategy, intensive camera trapping was carried out in Parsa National Park from November-February 2017. Camera traps were set up for 21 consecutive days in 167 grids covering an area of 637.4 sq.km, including an extension area of 127.3 sq.km. Each grid was set up at 2*2 sq.km. From the survey 17 individual tigers (6 male and 11 female) were recorded. Tiger population in Parsa was found to have increased compared to the 2013 survey. Overall prey density in PNP was 21 ±3.2 (SE). Major prey species for tigers were Chital, Sambar, Barking deer, Gaur bison and wild boar. The tiger and prey base monitoring was carried out under the leadership of Parsa National Park and financial support for the monitoring was obtained from ZSL Nepal.

In line with the National Tiger Recovery Plan 2010, camera traps were set up for 21 consecutive days in 167 grids covering an area of 637.4 sq.km in Parsa National Park

Historical Soft Release of Captive Vultures

In a first-of-its-kind case, six female vultures were released into the wild from the Vulture Conservation and Breeding Center (VCBC) at Chitwan National Park to Pithauli in Nawalparasi district on April 15 2017. VCBC was established in 2008 with the aim of ensuring the long term survival of the critically endangered Oriental White-rumped vulture *(Gyps bengalensis),* and it is being undertaken jointly by the Department

of National Parks and Wildlife Conservation (DNPWC), National Trust for Nature Conservation (NTNC), Bird Conservation Nepal (BCN), Royal Society for the Protection of Birds (RSPB) and Zoological Society of London (ZSL).

BIODIVERSITY/NATURAL RESOURCE CONSERVATION

Historic Stockpiles Destruction

4012 wildlife parts of 48 species were burnt after 20 years at the Chitwan National Park headquarter in Kasara on May 22, 2017 in a landmark demonstration of Nepal's commitment to zero poaching and a non-tolerance towards wildlife crime

In a landmark demonstration of Nepal's commitment to zero poaching and a non-tolerance towards wildlife crime, a total of 4012 wildlife parts of 48 species were burnt after 20 years in Chitwan National Park (CNP) headquarter, Kasara on May 22, 2017. These included wildlife parts stored at Tikauli (1739 parts) and Kasara (2273 parts) that were collected from across the country over time. The Hon. Minister for Foreign Affairs and chief guest inaugurated the programme, accompanied by numerous other distinguished national and international guests. Led by the Government of Nepal and its line agencies, the event was made successful through the direct support of the Nepal Army, NTNC, WWF, ZSL, USFWS and SAWEN. The historic act is meant to send out a clear message to all those involved in wildlife-related crime that animals have value only when they are alive, and not when dead.



Rapid Response Team (RRT) Strengthening

Our experience from monitoring of tiger population has demonstrated that with good conservation measures tiger population can be rebound very quickly. For this a sound rapid response teams (RRT) needs to be operated on the ground. Thus, to better manage Human-Tiger Conflict (HTC) situations, and to empower the local community through scientific record keeping, tiger monitoring and use of field equipment, such as range finder and GPS, BCC provided training to RRT members from 59 members from the twelve buffer zone user committees (BZUC) (8 BZUC in Chitwan, 4 BZUC in Parsa). With this, RRT's mobilization, that has already had a huge role in reducing fire hazards and illegal poaching of wild animals, will continue to have greater impact.

Further, in order to support and capacitate rapid response teams with materials and tools necessary for tiger conservation, 30 sets of field gear support was distributed to all the RRT members of 30 BZUC of Chitwan and Parsa. Over 2700 pieces of varying field gear (30 sets), including tents, rucksacks, sleeping bag, mattress, water bottle, torch and solar lights, raincoat, boot, bag pack, helmet, etc. were distributed in the process to capacitate community and youth mobilization.

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Endowment Fund Established in Buffer Zone

To financially capacitate rapid response teams manage Human Tiger Conflict, BCC helped establish an endowment fund each for the RRTs of Nirmal and Kusumbatika buffer zone user committees (BZUC). These committees are centrally located at the cross roads of three very important tiger bearing protected areas – Chitwan NP, Parsa NP and Valmiki Tiger Reserve (in

India). Following the fund establishment, NTNC supported in the drafting of the endowment fund mobilization guideline in consultation with park authorities and the local community. Subsequently the guideline was endorsed by the buffer zone management committee. Going forward the endowment fund will be completely administered through this guideline. Besides motivating these committees for successfully accommodating their trans boundary tiger conservation efforts, the funds will bring about: extra vigilance at the community level wherein a mechanism for relevant information is provided to park authorities on any suspicious poaching activities; keeping a check on retaliatory killings of tigers arising from human tiger conflict scenarios; engage and motivate youth action, along with providing other community-based support. Steps such as these have key role to ensure community's commitment and proprietorship in the wise management of natural resources over time

HUMAN-TIGER COEXISTENCE

Human-Tiger Conflict (HTC) Survey and Historical Data Collection

With the objective to identify ground level causes of human-tiger conflict and implement conflict reduction strategies engaging local communities, household survey through semi-structured questionnaire and focal group discussions was conducted in the buffer zone user committees (BZUCs) around Parsa National Park (PNP). The survey covering 260 households (10% of total households) established that within the last 20 years the total number of livestock killed by tigers alone was 437 (including 329 goats, 87 cows, 18 buffalos and 3 pigs). Further it was found that the majority of households (HHs) surveyed depended on agriculture and livestock rearing practices, wherein it is ascertained that the possible reason for increase in HTC numbers are due to the practice open livestock sheds (95% of the HHs), grazing in the parks/buffer zone forest coupled with the increasing tiger population inside the Park.



From the human-tiger conflict survey and historical data collection covering 260 households in the buffer zone user committees around Parsa National Park, most of the communities expressed that conflicts with tigers had considerably decreased compared to 15-20 years ago

Throughout six months (from January to June 2017), focus group discussions were undertaken in 13 BZUCs with the purpose of managing conflict-related incidents, especially related with tigers and leopards. Most of the communities mentioned that that the conflicts with tigers had considerably decreased compared to 15-20 years ago, especially regarding human injuries and fatalities. However, there are frequent incidents of livestock depredation by leopards in the area. Furthermore, communities expressed an increasing trend of crop raiding incidents by Spotted Deer *(Axis axis),* Blue bull *(Boselaphus tragocamelus)*, Wild Boar *(Sus scrofa)* and Asian Elephants *(Elephas maximus)*. Since most of these conflicts usually occur in encroached public lands, relief from government has not been claimed. As a result, these communities lack formally established conflict records. About 95% of the HHs who suffered livestock loss from predation claimed that they did not receive any compensation which could be another crucial issue regarding the participation of local communities in tiger conservation. The survey will thus enable us to better gather and document baseline data to identify ground level causes of human-tiger conflict and implement better conflict reduction strategies in the future by engaging local communities.

Human-Wildlife Conflict Database and Conflict Mapping

Given the nemesis of human-wildlife conflict (HWC) throughout the national parks of the country,

A mobile application designed to digitize human-wildlife conflict data for online application and storage will help archive collected data at NTNC's online data portal, from where real time conflict data can be analyzed

there is a need of making better understanding of conflict-related scenarios. With the objective to enable a digital portal for human-wildlife conflict-related cases and create an online database in Nepal, a mobile application has been designed. The digital database which will be automatically archived at NTNC's online data portal (available at BCC webpage) would thus enable online application and tracking. It is believed that this will be a significant step to simplify data access while also streamlining conflict events from the field, thereby helping the community find partial solutions by integrating technology into their lives.

Predator Proof Corral Construction

In order to combat livestock depredation by large carnivores like tiger and leopard, BCC supported in the construction of 175 predator-proof corrals to the buffer zone user committees (BZUC) of Panchamukhi, Sunakhari, Nirmal, and Nirmal Thori in Chitwan National Park. The four BZUCs were selected keeping in mind the sensitivity of these areas as they cradle between large carnivore populations that exist in the transboundary corridors of Chitwan-Parsa National Park and Valmiki Tiger Reserve, where incidence of conflict is high. The corals were made using locally available wood for the frame, whereas purchased tin sheds and mesh wire were used in the roof and walls respectively. Following the initial round of discussion with community members, technical persons from NTNC prepared a proposed design of 10ft length and 6ft width that would accommodate at least 8-10 goats. Given that human-wildlife conflict (HWC) is a burgeoning problem faced by most protected area managers and buffer zone communities, the corrals are expected to give a sigh of relief and support measures for human-wildlife coexistence.



SUSTAINABLE LIVELIHOOD PROGRAMME

Improved Cow Farming Support For Marginalized Households

To promote improved husbandry practice within the local community and to minimize pressure on buffer zone and core area, BCC through USFWS funded project provided financial support to Manahari BZUC in Parsa National Park to purchase improved breeds of cow for 25 households of Ramauli and Pratappur. Since these are settlements previously relocated from the park, the initiative is expected to have an even more significant role of fulfilling the community's daily subsistence requirements. Subsequently a bylaw has been developed by BCC which was endorsed by BZUC to ensure the effectiveness of the programme. Initiatives such as these are seen as intrinsic to engage conservation priority along with acknowledging the economic wellbeing of the community members.

Livestock Disease and Vaccination

Majority of the households in Manahari buffer zone user committee (BZUC) in Parsa National Park (PNP) have livestock. With proper veterinary care this community has tremendous capacity to commercialize livestock production. To ensure local livestock treatment and impart knowhow, BCC provided basic veterinary training to two members from within the community. The training that lasted for 35 days mainly covered aspects related to veterinary care and surveillance. Consequently, two trainees have now acquired necessary skills to work in the capacity of veterinarian assistant. Besides improving the household's access to proper livestock health,

interventions such as these are also expected to make a significant contribution in decreasing anthropogenic pressure on forests. During the training period vaccination was also undertaken for the cows of 25 households. Over the last five years BCC has already vaccinated more than 600 livestock in the Manahari BZUC, clearly making this an important achievement in combating livestock-related diseases.

CONSERVATION EDUCATION

Integrating Tiger Conservation Awareness in School

Reaching out to young school children of the community is vital to ensure effectiveness and sustainability of the conservation measures undertaken so far. Due to limited outreach in the buffer zone areas, many communities still lack awareness and conservation knowhow. To fill this evident gap, three separate events were undertaken over a week's period to engage awareness about the importance of tiger conservation among young student groups. In each of these events, 3-4 students from each community, with a preferred affiliation to eco-clubs (conservation clubs already established in schools) were invited to attend innovative sessions focusing on tiger conservation awareness. Students were selected between Grade 5 and 10 and were made aware about tiger's behavior, its distribution and population, general morphology and present status. Besides students, participation was also open for teachers and other community members. Following this, 52 students from across 11 schools who attended these sessions are expected to share the knowledge with their friends and families, thus positively influencing the community's passion and responsiveness to wildlife and nature.

Eco-club Formation and Strengthening for Tiger Conservation

Green Force Clubs (GFCs, also known as Eco-clubs) are set up across different schools of the national park buffer zone area to lead conservation activism in their related communities. To continue strengthening their role and reach, this year 10 GFCs were reformed in the Manahari buffer zone user committee of Parsa National Park (PNP) mainly with the aim of heightening awareness and promoting campaigns for tiger conservation. Besides conducting conservation awareness activities within their school, these youth-led clubs also actively engage in environment cleaning campaigns and in pressing on conservation-priorities among their communities. A special one day orientation and training programme was organized for the members of the newly formed GFCs wherein various aspects related to conservation and biodiversity of the park, as well as their roles and responsibilities to facilitate a positive change in the society was covered. In the process support for stationeries, leaflets, posters and financial support will continue to be provided to each of these clubs in the future.

CLIMATE CHANGE AND RESEARCH

Forest Restoration through Nursery Plantation

For plantation and restoration of degraded forests, saplings of different forest species were produced in the nursery of BCC and PCP. More than 31,500 saplings of 20 different species were produced and distributed during this period by BCC in various parts surrounding Chitwan and Parsa National Park. Saplings produced were distributed mainly to the buffer zones of CNP/PNP, CFUG, schools for



Under NTNC's 'green initiative' aimed at improving forest cover to create clean and green city/villages, 31,511 seedlings of 20 different species were produced and distributed from BCC's own nursery to the various communities around Chitwan-Parsa complex

plantation in public and private land. Along with reviving greenery in the Chitwan-Parsa complex, the plantation effort will make available grasses and firewood in private lands of farmers, thereby largely reducing forest dependency by providing alternative source for forest product requirements.

Climate Change Monitoring in Permanent Plot

To document the biodiversity and establish a baseline data for long term ecological monitoring in the 5 permanent plots of Chitwan, Palpa/Syangja of the CHAL area, climate change monitoring was completed in pre-identified permanent plots (plot size of 2*2 km²)

Climate change monitoring was carried out in the pre-identified permanent plots of the Chitwan-Annapurna Landscape (CHAL). BCC carried out the research in a total of 5 permanent plots (plot size: 2*2 km²) of Chitwan (in Kaule, Kabilas, Khorsor), and Palpa/Syangja (in Tilakpur, Maunga-Hungi). The objective of the proposed study was to document the biodiversity in the permanent plots in order to establish baseline data for long term ecological monitoring in the face of climate change. Floral survey was done through vegetation sampling for invasive and graminae species and Camera trap, Sherman traps and Mist net, Sign survey, Bird survey (transect count/point count), Reptile and terrestrial amphibian survey, Butterfly survey was done for faunal study from July 15 to August 30, 2016. The study provided the baseline data to understand the long term impacts of climate change on nature and people. Going forward, this would help conduct biodiversity assessment regularly in these permanent plots and thus inform better intervention strategies to understand and combat the effects of climate change.

Biodiversity Monitoring Protocol

Developing a standard biodiversity monitoring protocol for assessing the impacts of emission reduction activities is necessary to assess whether conservation initiatives undertaken are effective or not. They are a key component of instituting the protected area management plan. To develop this kind of protocol for REDD+ sites in Terai, a pilot survey was carried out in Parsa National Park. In order to establish a baseline data for designing the biodiversity monitoring protocol, pre-testing of specified research methodology was done identifying the critical areas along the landscape with rich biodiversity for scientific studies. Camera trap, Sherman trap and Mist net, Pitfall trap, Bird survey (transect count/point count), Reptile and terrestrial amphibian survey (VES method), Butterfly survey was carried out for faunal study.

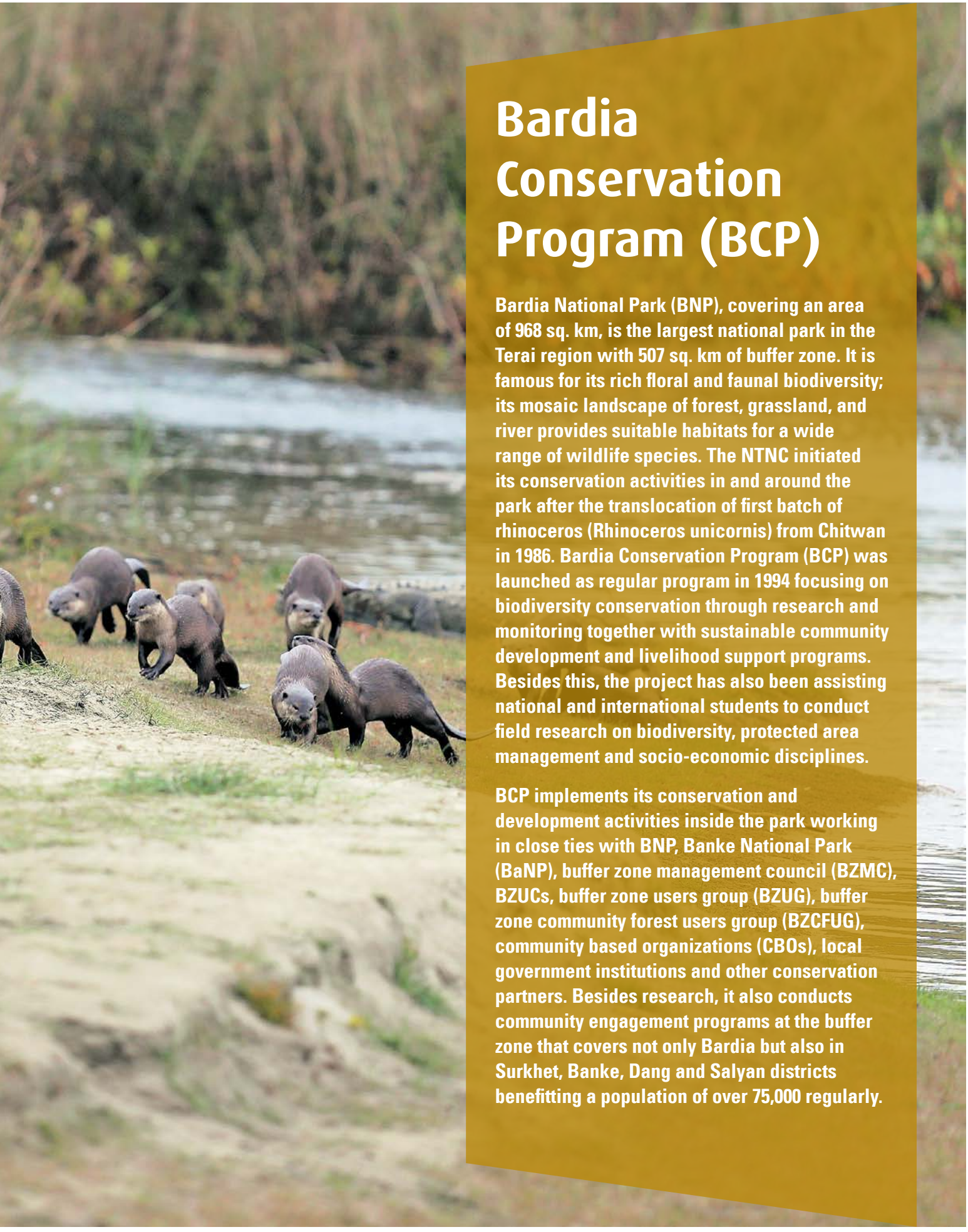


Occupancy survey, disturbance and threats were assessed with the aid of various indicators like sign of animals (both wild and domestic) and disturbance (grazing, cut stumps, branch clearance, litter collection, encroachment, construction, sand/stone collection, land slide/erosion, invasive species, presence of human, scars of fire, etc.). In the process, a scientific paper was also published on Himalayan Stripe-necked snake. The field activity was accomplished through financial support from ICIMOD, with technical support from BCC. The baseline data generated will further help understand the long term impacts of climate change on nature and people.

Capacity Building on Wildlife Disease Surveillance and Molecular Science

Established as part of the national capacity building on wildlife disease surveillance, the molecular laboratory at BCC is the first of its kind facility in the country equipped to carry out genetic research for wild animals. The laboratory which is located in Chitwan at the heart of the country's wildlife resources, was established to help support wildlife management authorities with science-backed research and information mainly on the dynamics of endangered species. During this year, surveillance of Elephant Endotheliotropic Herpes Virus (EEHV) type 1 infection was carried out on breeding herd of Asian elephant. Six out of ten selected (60%) asymptomatic elephants were found positive for EEHV 1. The findings of the PCR analysis revealed the presence of highly fatal disease infection in the asymptomatic elephant of Chitwan district, thus indicating that EEHV is a major threat to their conservation. Besides this, the facility has already conducted genetic study of musk deer, pangolin, and translocated/rescued animals. The establishment of the laboratory that was supported through the Hariyo Ban Programme (HBP) is further expected to support upgrading of lab equipment and research capacity, thus ensuring that genetic approach for wildlife management facilitates widespread advances in wildlife ecology and conservation.





Bardia Conservation Program (BCP)

Bardia National Park (BNP), covering an area of 968 sq. km, is the largest national park in the Terai region with 507 sq. km of buffer zone. It is famous for its rich floral and faunal biodiversity; its mosaic landscape of forest, grassland, and river provides suitable habitats for a wide range of wildlife species. The NTNC initiated its conservation activities in and around the park after the translocation of first batch of rhinoceros (Rhinoceros unicornis) from Chitwan in 1986. Bardia Conservation Program (BCP) was launched as regular program in 1994 focusing on biodiversity conservation through research and monitoring together with sustainable community development and livelihood support programs. Besides this, the project has also been assisting national and international students to conduct field research on biodiversity, protected area management and socio-economic disciplines.

BCP implements its conservation and development activities inside the park working in close ties with BNP, Banke National Park (BaNP), buffer zone management council (BZMC), BZUCs, buffer zone users group (BZUG), buffer zone community forest users group (BZCFUG), community based organizations (CBOs), local government institutions and other conservation partners. Besides research, it also conducts community engagement programs at the buffer zone that covers not only Bardia but also in Surkhet, Banke, Dang and Salyan districts benefitting a population of over 75,000 regularly.

NATURAL RESOURCE CONSERVATION PROGRAMME

Orahi River Restoration

Flash floods that occur mostly during the summer season have been largely responsible for the rapid degradation of the Orahi river bank. Thus, to advance restoration activities as well as to minimize grazing threats and unsustainable use of community forest resources, plantation initiatives along with applications of bio-engineering solutions were undertaken throughout the first phase of the Hariyo Ban Programme. During this year, 8 ha of the river bank was restored along with installation of barbed wire fencing along the forest area. This has led to control in grazing coupled with increased growth in forest cover. Consequently the visiting of wild animals in the restored area indicate positive impact on wildlife as well as the 202 households of the Sukhad Sutaiya Buffer Zone Community Forest in Thakurbaba Municipality

Tiger and Prey Base Monitoring

Keeping with the country's target to double its tiger number by 2022, Banke and Bardia National Parks, along with its adjoining areas promise great potential. These areas inhabit substantial number of tigers with low density. Thus, in order to determine their status, tiger population and prey base density was established after conducting monitoring between November 2016 and January 2017. Undertaken as a part of the annual exercise to assess occupancy of tiger and its prey base along with analyzing anthropogenic-related threats, findings indicate an upward trend. This year, a total of 75 breeding individuals were identified in and around the Banke-Bardia corridor (Bardia NP: 62; Banke NP: 11; Shared Habitats in Banke and Bardia NP: 2).

Before starting tiger and prey base monitoring, Bandevi puja was observed and orientation training to field technicians was given to cover different aspects of tiger and prey base monitoring such as camera trapping protocol, prey base monitoring techniques, occupancy surveys, use and handling of equipment, GPS and map reading, systematic data collection, and record keeping. Photographic capture-recapture method was used for estimating abundance of tiger in light of the species' elusive nature, making use of the unique identification patterns on each individual. Capture-recapture models provide a statistically robust framework to estimate species abundance, particularly when a population is said to be closed to births, deaths, immigration or emigration during the survey period.



Translocation of Rhinos in Babai Valley

Bardia National Park holds second largest rhino population in Nepal after Chitwan National Park (CNP) and promises a great habitat potential for the one horned specie. Considering the translocation of 5 rhinos in 2015, the Government of Nepal decided to translocate more rhinos to ensure immediate sex balance. This year in March, 3 more rhinos (M:1, F: 2) were successfully translocated from CNP into the Mulghat area and Babai Valley of Bardia National Park. The target of the government is to ensure a second viable population of rhinos in Bardia valley which has focused equally on stepping up habitat management-related tasks and controlling of illegal activities.

Community Forest and Wildlife Habitat Restoration

Plantation support to the Siddhapuri user committee at Chisapani, Banke included 1500 seedlings of North Indian Rosewood *(Dalbergia sissoo)* Jamun *(Syzygium cumini)* White Siris *(Albizia procera)* Black Siris *(Albizia chinensis)* etc. Besides this, an artificial pond ensuring consistent water supply was also constructed in the community forest to support tiger and prey species with drinking water. Since the community forest connects Bardia National Park's Babai valley and the Banke National Park it is a vital corridor for wildlife. Recent camera trap monitoring exercises have indicated prominent tiger movement from Bardia to Banke National Park that further connects to India's Suhelba wildlife scantuary. For tigers moving from the Babai valley, this pond will therein support prey species and tiger in the dry season and be a great impetus to transboundary tiger conservation efforts. Addtionally a 600 meter long forest fireline has also been improved to control the forest fire and save the newly planted seedlings.

Guard Post Construction

Between March and November 2017, 3 new guard posts namely Dhakela Post in Bardia National Park, and Sikta and Deorali Post in Banke National Park were constructed to ensure better park security. Wildlife conservation in Terai protected areas is becoming a greater challenge day by day due to threats from illegal wildlife hunting and poaching. This has necessitated extending vigilance capacity at strategic locations and developing infrastructures that will help equip security forces to take the task of better park management in the future. For instance, the guard post in Dhakela area of BNP that is equipped with both army post and game scout posts will help maintain improved coordination among security personnel.



Following the translocation of 5 rhinos in 2015, this year 3 more rhinos were successfully translocated from CNP. The target of the government is to ensure a second viable population of rhinos in Bardia valley which has focused equally on stepping up habitat management-related tasks and controlling of illegal activities

Training to Nepal Army on Law Enforcement

Nepal Army personnel from Rana Sardul battalion, Bardia and Gorakh Dal battalion Banke were trained about basic wildlife identification techniques and effective ways of law enforcement and patrolling. The training was conducted between 21-23 February and was attended by 50 participants from each site. Training aspects covered theoretical sessions on changing paradigm of conservation, roles of army personnel in conservation and pragmatic sessions on wildlife identification techniques, patrolling and monitoring tools and techniques. It is expected that this training will especially help newly recruited army staffs to carry out their work.

Training session for Informant Handlers

Underground informant networks play a significant role in implementing effective anti-poaching measures by concerned agencies. Park authorities at Bardia and Banke National Park also rely heavily on the use of such informant networks. To this end, National Park and Nepal Army personnel were trained around aspects related to underground informants handling – their sensitivity and use, benefits and kind of information that can be garnered, information crosschecking and validation, their legal status, payment options, among other technical aspects. Real life examples using informants provided participants with clarity to cope in varied situations. These are expected to undoubtedly help control poaching and illegal activities in the protected areas in the near future.

ECOTOURISM DEVELOPMENT

Homestay Promotion

Sathkholuwa village in Bardia National Park buffer zone area (BNP-BZ) offers great opportunities as an ecotourism destination with immense potential for wilderness. The lake area within the rich forests is especially a striking asset. For promoting homestay alternatives, this year BCP provided financial assistance wherein a revolving fund of NPR 1 million was established for seed money support. This in turn will enable the newly established homestay with access to soft loans for infrastructure and utility development tasks.

Establishing a credit mechanism for the households in Sathkholuwa Homestay was not going to be enough. Therein 9 households each were supported with well-maintained bathrooms along with a gol ghar (open-rounded recreational space) to accommodate with tourist preferences. Thereafter a 5-day homestay operation and management training was undertaken

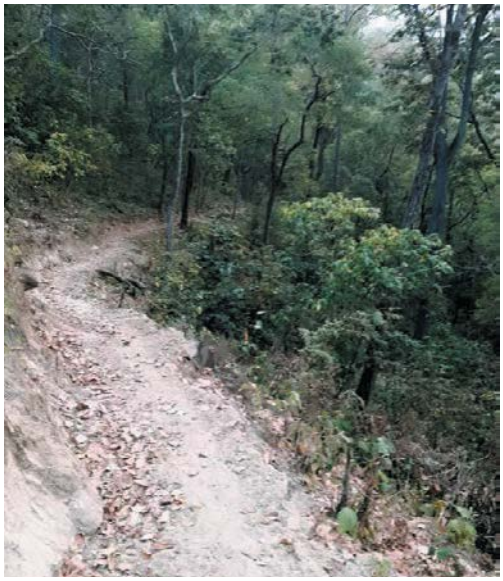


Establishing a credit mechanism for these households was not going to be enough, especially with the lack of basic infrastructure and facilities around the homestay area. Recognizing these, BCP took to fill related shortcomings. Upon assessing the homsestay's immediate needs, we found that toilet and sanitation among the households were very poor. Support was inevitably essential if these were to be upgraded for tourists. Therein 9 households each were supported with well-maintained bathrooms along with a *gol ghar* (open-rounded recreational space) to accommodate the homestay with basic yet hygiene services. In addition to these, homestay capacity building initiatives included: a 5-day homestay operation and management training provided to 37 locals; and support for bedding and kitchen utensils, improved toilet and kitchens to another 10 community homestays in Chhinchu, Lekhparajul and Hariharpur.

Along with diversifying the scope for tourism opportunities, initiatives such as these are expected to help improve the livelihood of poor communities residing in the village area who face tremendous hardships in their lives due to the emergent challenges, especially from wildlife-related conflicts. All these will help enhance the homestay's capacity for basic amenities and services.

Trekking Trail Improvement

Eco tourism promotion support in northern buffer zone villages of BNP included improvement of trekking trail (5 km) in three user committees, mostly between the school and settlement areas. These will help facilitate better connectivity, while enabling local users and visitors, especially small school children, with safe and ease of access between settlements. Given that the northern buffer zone is a promising site for bird watching and among the very few options for trekking around the Bardia National Park, this is seen as a significant ecotourism intervention.



Guide Workshop for Senior Nature Guides

A total of 22 senior nature guides were trained on various aspects related to wildlife for enhancing their professional capacity and service orientation. Most nature guides in Bardia work with very little exposure and knowhow for professional guiding. The five-day training provided by international trainers will thus help the senior nature guides gain exposure to global best practices and widen their scope to further enhance their skills and professional careers.

COMMUNITY DEVELOPMENT

Road Upgrading for Smooth Patrolling

Village roads and forest dirt roads play a key role in facilitating effective patrolling-related tasks. In the absence of such roads, adequate law enforcement may not be possible. To improve the quality of dirt roads in buffer zone areas and forests of Banke and Bardia National Park, more than 9.3 km of maintenance work was completed this year. Consequently, illegal activities are further expected to be minimized along with strengthening capacity and reach of the related patrolling groups who have an extraordinary role for making conservation-related activities successful.

Income Generation Support

For enhancing community income generation opportunities, support was made to Taranga Organic Flavor Company at the Northern Buffer Zone (NBZ) of Bardia National Park. The group has 220 households and the company process, dries and shreds the produced ginger for export to other parts of the country. BCP's support included construction of a washing pond and supplying pipes required for water supply. With our continued support for modern processing techniques, the area's potential for ginger and other spices will further enhance into better standard of living of the community.

Besides this, support for other income generation alternatives by BCP included: 10 female goats provided to poor and marginalized locals of Lekhgaoun in Taranga; a sewing and tailoring center established for Ms. Sangita Sunar. Ms. Sunar is one of among the skilled marginalized participants of the sewing and tailoring training previously provided by BCP.

Cooperative Management Training

To establish sound management and administrative efficiency of four cooperatives operating in the NBZ of Bardia National Park, a three-day long cooperative management training was organized at Thakurdwara, Bardia for 10 executive members. Comprising of intensive theoretical and practical knowledge sessions, documents of the co-operatives were also analyzed as part of the training wherein mistakes and mitigation measures were shared. On the final day, participants were taken for visit and interaction at Bishwasilo Cooperative – a reputable cooperative in the area – where they closely observed its operation and took part in interaction with executive members and staff.

Mega Health Camp

Free mega health camps organized at Bardia National Park (BNP) on March 01, 2017 were able to reach out to more than 2000 locals from

More than 9.3 km of dirt roads improved this year in the buffer zone areas and forests of Banke and Bardia National Park will ensure a key role in facilitating effective patrolling and other law enforcement-related tasks

More than 2000 locals from the buffer zone area of Bardia National Park were able to receive medical services and interventions through health camps organized to bring specialist doctors free of cost to the community's doorsteps

the buffer zone area with medical services and interventions. The camps provided for Specialist doctor services with possible free medicine along with minor surgery facilities. Besides this, two minor free health camps were also organized at the health post at Banjariya, in the western buffer zone of BNP.

Small Agro-Based Enterprises Support

To promote agriculture and agro-based products, this year Madela buffer zone community forest user group and Hariharpur user committee were supported with 500 seedlings for black pepper farming. This will help not only enhance income opoportunities of villagers associated with the community forest but also incentivise farmers in more meaningful forest consrevation roles. As a non-palatable cash crop and a high value non-timber forest product (NTFP), introduction of black pepper farming has the potential to render improved benefits than traditional crops.

Restoration of Degraded Landslide Area

Across the hill regions, the menace of landslides continue to impact scores of communities each year. This year BCP made significant interventions in order to restore degraded landslide sites in Lekhparajul and Tarang user committees. Slope stabilization interventions to control the rapidly growing erosion downhill were undertaken by using structural embankment with stone walls and planting of indigenous plants along with broom grass. As a result, restoration will help secure safety of these sites along with enabling response among villagers – especially for farmers and school children.



HUMAN-WILDLIFE CONFLICT MANAGEMENT

Predator Proof Corral Construction

Human-wildlife conflict is considered to be one of the most pressing issues in wildlife conservation, especially in the Terai protected areas. Even though past conservation efforts have helped substantially restore wildlife and their habitat in the buffer zone forests, rise in livestock causalities and other forms of conflicts continued in the area. Most of the livestock depredation cases are due to the traditional goat sheds easily approachable by leopards and other predators. To harmonize park-people relationships, 115 poor households living in the park fringes of Banke and Bardia Nationa Parks were provided with predator proof coral construction support by BCP. These have not only reduced livestock depredation cases along the buffer settlements, but have also enhanced peoples' fortitude in conservation.

Fencing Community from Wildlife

With increasing populations of tiger prey base, it is common for buffer settlements to experience bitter case scenarios from crop damage. Due to this, guarding settlements with a dual function fencing system (barbed wire and electric fence), mainly for the sake of minimizing crop loss is necessary. During this year, BCP supported fencing construction of more than 2.5 km in Balapur village of Madhya Bindu buffer zone committee in Banke National Park. Evidently, a good reduction of crop loss from tigers' prey base, along with increased peoples' participation in conservation was witnessed. Another 2 km of fencing was also installed in Betahani village of Thakurbaba Municipality in Bardia. Besides reduction in crop

loss and livestock depredation cases, the electric wire fencing installation mechanism will also be a key solution in combatting anthropogenic-related threats in the park area.

CONSERVATION EDUCATION AND EXTENSION PROGRAMME

Eco-Teachers Refreshment

Two day's refreshment training was provided to 44 eco-teachers this year to keep them updated on contemporary matters related to conservation. The training was facilitated by BCP's staffs and SENSE, Nepal's members with the objective of refreshing eco-teachers of the buffer zone on conservation awareness delivery. Classes session on biodiversity conservation, climate change, and human-wildlife conflict mitigation, along with other park-related contemporary matters were someo of the major focuses. As part of this, the recently developed and implemented conservation education curriculum at the NBZ was also reviewed, wherein suggested revisions will be incorporated in the next edition to be printed.

Conservation Education Camps

Conservation dissemination consistently engages acorss communities and schools. This year fourteen conservation education sessions were carried out across eight schools and four communities in the northern buffer zone of BNP. Whereas imparting cosnervation knowledge and call for responsiblity and leadership (example: through Eco Clubs) are the primary focus in schools, at the community level, conervation awareness, mobilization and response are taken to priority. For instance, this year, whereas schools sessions were mostly focused on understanding the general ecology and behavior of four major animals of BNP (tiger, leopard, rhinoceros and elephant). Whereas at the community level, they were related to dealing wih human-widlife conflict mitigation measures, like contructing improved corrals, enhancing community participation and coverage, etc. In this way, we ensure a healthy balance between community awareness and response, conservation knowledge and action. An example in this relation is our support for the first Babai Fair held between January 27 and February 06, 2017, wherein to create antipoaching related vigilance and knowhow, BCP was able to reach out to over 5000 visitors.

Jungle Visit for Students

An effective way of engaging young students in conservation matters is by exposing them with firsthand experiences on the ground. This year, more than 250 students, teachers and community members were accommodated to such visits that

This year schools sessions were mostly focused on understanding the general ecology and behavior of four major animals of BNP—tiger, leopard, rhinoceros and elephant. Whereas at the community level, they were focused to dealing wih human-widlife conflict mitigation measures





give a broader perspective of the activities being undertaken at BNP. In one such visit, students from a school in Taranga handed over the collected catapults from their village to BCP, wherein in turn BCP provided them with volleyballs to keep them motivated. Such activities enable students to come out of their typical classroom zone, and often involves interaction and natural exposure.

CAPACITY BUILDING TRAINING FOR CBAPU MEMBERS

CBAPU Interaction and Orientation

Networking sesesions for CBAPUs and members of user committees are crucial to ensure unity of agenda and purpose among varioius related groups, who are at the frontline of controlling illegal activities

Capacity building among local youth is necessary to ensure that they continue to play a telling role in conservation related matters, espeially through the community based anti poaching units (CBAPU). Since CBAPUs undertake their tasks within team networks, they require to consistently share and exchange intelligence and knowhow for effective implementation. As part of these, BCP undertook various networking sesesions for CBAPUs and members of user committees in Chhinchu and Hariharpur on matters concerning – reorienting roles and responsibilities, strengthening mechanisms for identification and control of illegal activities, communication mechanisms for reporting to authorities, community awareness and mobilization among others. Besides these, such engagements ensure unity of agenda and purpose among the varioius related groups.

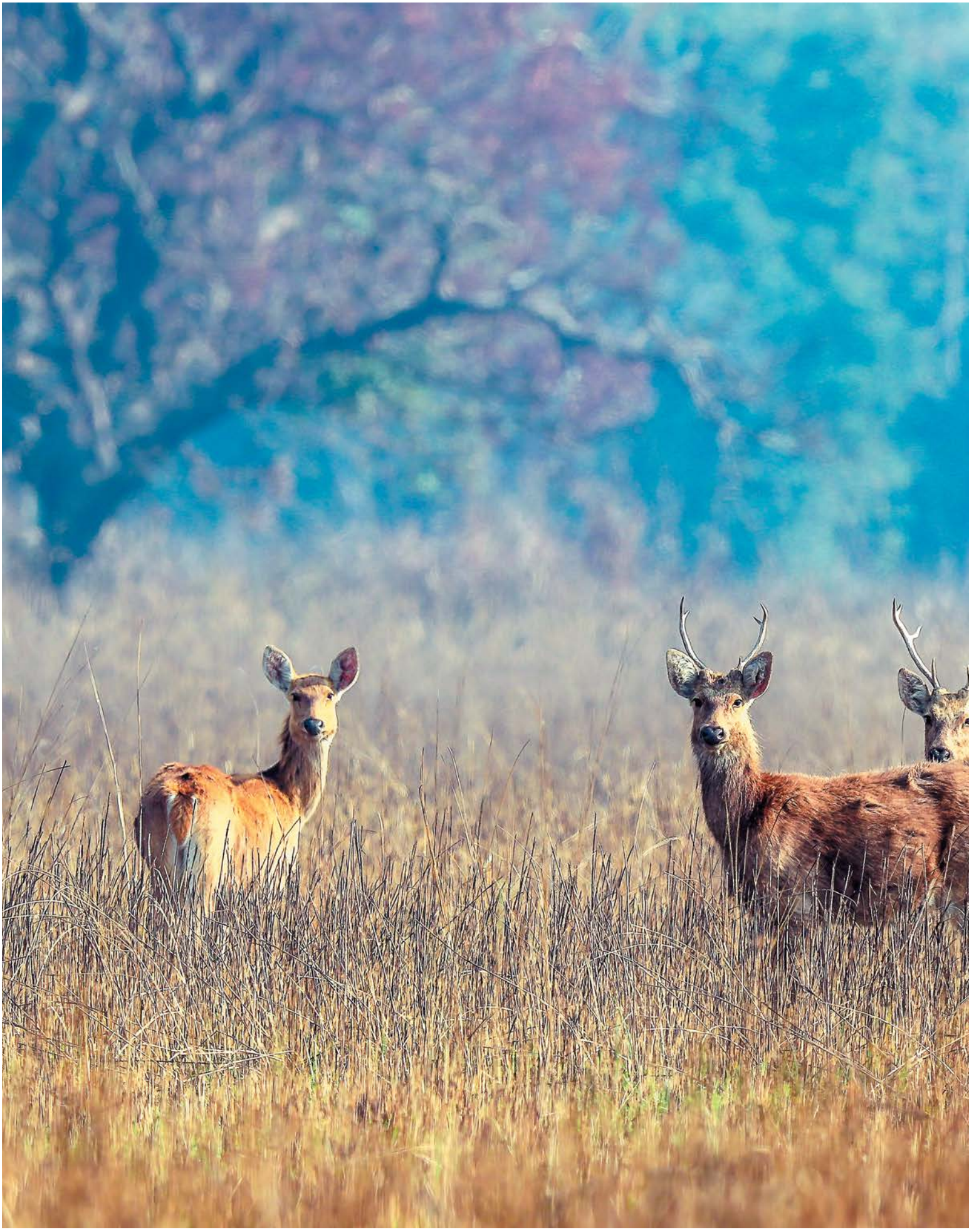
Alternative Livelihood to CBAPU

Aiming to enhance livelihood sustainably of those involved in anti-poaching activities, BCP provided a three-month long vehicle driving training to four CBAPU members of Lekhparajul User Committee in Birendranagar, Surkhet. After receiving the training completion certificate from the related driving institute, they will subsequently move with the process for obtaining licence to set on a new career. Although the training was made availaible to only a few CBAPU members, the support will help incentivise appropriate conservation action among the community in the future.

CBAPU Orientation and Cross Site Visit

To facilitate onsite knowledge and experience sharing among community based anti-poaching units (CBAPU) of the three protected areas in western lowland Terai in BNP, BaNP and SNP, two days orientation and two days cross site visit was organized involving 35 CBAPU members. The major objectives of the programme were to form an informal network of all CBAPUs functional in the three protected areas, and to familiarize participants about site specific innovations, challenges and opportunities. Specific sessions were undertaken on shifting conservation paradigms, community participation, security matters, illegal hunting and poaching, wildlife identification SMART patrolling, tools and techniques related to information gathering and dissemination, and legal compliances among others. As voluntary youth groups, CBAPUs have already significantly contributed in Nepal's conservation efforts. However, voluntary engagements require consistent guidance, logistic support, livelihoods support, training and motivation. Thus the programme was received much positively by successfully articulating the core agendas concerned with the future role of CBAPUs.







Shuklaphanta Conservation Program (SCP)

Shuklaphanta Conservation Program was started in 1999 as a satellite project under Bardia Conservation Program to monitor translocated rhinoceros from Chitwan. Regular activities have been carried out as independent program under NTNC since 2000. Currently SCP is working in and around Shuklaphanta National Park (SNP) focusing on biodiversity conservation. In buffer zone, majority of the activities are focused in Bageshwari, Shuklaphanta, Sundevi, Kalikich, Himalaya and Sagarmatha BZUCs. Over 50,000 local communities are direct beneficiaries of the program. SCP implements its project activities in close collaboration and coordination with SWR, Nepal Army, Buffer Zone Management Council (BZMC), BZUCs, BZUGs, BZCFUGs, locals agencies and I/NGOs.

The main objectives of the Shuklaphanta Conservation Program (SCP) are to safeguard endangered wildlife species and their habitats in and around SNP, and to improve the livelihood of marginalized communities around the park premises.

WILDLIFE RESEARCH AND MONITORING

Besides regular activities related to wildlife research and monitoring SCP continuously implemented the site specific management plan of blackbucks in the Hirapurphanta. Success in this was achieved in terms of the stability of the population with control in mortality. The species seem healthier and habitat extension has helped to create more space and feeding ground. Besides tiger monitoring in Suklaphanta, SCP carried out the translocation of 7 swamp deer to the Chitwan National Park (CNP) and 5 Rhinos from CNP to SuNP. The ecological study of swamp deer focused on habitat utilization, preference and population dynamics.

Tiger Monitoring

Over a fortnight long intensive camera trapping exercises undertaken in 85 locations across SuNP area identified 17 individual tigers from 366 tiger images

Prey base monitoring was accomplished mostly using camera trapping and line transect survey methods. The total area of the park was designed in two blocks consisting of a total of 87 grids wherein a pair of motion sensor camera trap was installed in the center of the 2*2 sq.km grids. Initial findings shows that 17 individual tigers were identified (8 Females and 9 Males). A total of 1449 camera trap nights were carried out in different 85 locations. From field level analysis 366 tiger images were found trapped in 43 locations. The camera trap was initiated from 23rd November 2016 to 11th December 2016. Data entry of line transects survey for prey base density calculation is completed and final data publication is remaining during this reporting period. Species wise photographs sorting have been submitted to SuNP office of DNPWC technical team for final analysis and result publication.

Rhino Translocation and Monitoring

During this year, five rhinos were translocated from the Chitwan National Park to the Suklaphanta National Park. The location was identified through field observation and rhino habitat survey of the park. After several rounds of observations by the Chief Conservation officer of SuNP, along with the team of SCP, the area around Hariyaphanta that lies by the edge of the Chaudhar River near the Rani Tal was identified as the most suitable location for the rhino on the basis of the food availability, shelter and marshy type land. The details about the rhinos are shown in the table.

After completion of the translocation, regular monitoring activities continue to be pursued diligently. On the basis of 2016 ID based rhino monitoring there are 10 rhinos in the SuNP. This year 5 rhinos were added to establish the genetic viable population of rhino in western Terai region of Nepal. Since the new rhinos are expected to take some time to familiarize themselves into their new habitat, possibilities for interaction with the local people in the buffer zones areas may increase. Thus consistent monitoring is crucial to avoid potential rhino-community conflicts, besides understanding their status and studying their behavior. Monitoring methodology used include direct observation from elephants, tracking by the receivers, pugmark observation and photo analysis.





Most of the rhinos were found in Darak (Chaudhar khola) area. The prime area of rhino habitat in SuNP is Hariya phanta and Chaudhar khola. All of the rhinos have been confirmed to be sound in their habitat.

Blackbuck Habitat Extension and Management

The management of reintroduced blackbuck in Hirapurphanta has been a case of success as part of the Hariyo Ban Program phase I. Intensive habitat management work continues to be pursued into phase II as well. With this, the population of blackbuck is following an increasing trend. A site specific management plan is being followed for the management of blackbuck, wherein efforts includes habitat extension (an additional 20ha area is in progress), nutrient supplement from crop cultivation (maize, lentil and cowpea etc.), and diet and medicine supplement among others. From a source population of 42, at present the population of blackbuck is 59 (26 Male, 18 Female, 11 Fawn and 4 Yearling).

Blackbucks Translocated to Hirapur phanta			
SN	Date	Source	Number
1	9/18/2012	Nepalgunj	8
2	9/20/2012	Nepalgunj	14
3	10/1/2012	Central zoo	6
4	7/4 - 10/2015	Khairapur	14
		Total	42

Ecological Study of Swamp Deer

Swamp deer monitoring is a part of the regular work undertaken by SCP and it is done with close collaboration with the SuNP. Technicians of SCP and SuNP conducted monitoring across locations from 28th to 31st March 2017. Direct head count method was applied wherein elephants, binoculars, GPS, and vehicles were used in the monitoring process. The count found almost same population as published previously with no significant change in population (2301 no.). On the other part of ecological study, the species composition of grassland area by the vegetation survey method was carried out to assess the habitat pattern, their utilization and preference by fixing the permanent plots in between 500 meter



From a source population of 42, at present the population of blackbuck is 59. An additional 20ha area of blackbuck habitat extension in progress in Hirapurphanta will further help to ensure the successful management of the species: first introduced from the Blackbuck Conservation Area in Khairapur, Bardia

in grassland and 1 km in Sal Forest area. Five km transect in grassland with 500m interval and 1km interval in Sal Forest area was fixed. The finding of the study is the part of PhD study of Mr Hemanta Kumar Yadav from the Messey University New Zealand.

Faunal Assessment of Biodiversity of Chure Ranage (Far-West Nepal)

To understand the biodiversity status of the Mahakali Block along the Churia range, camera trapping, occupancy survey and encroachment were carried out from the Mahakali river to the Karnali river wherein data collected is being reviewed for analysis and research to be published in the near future. Intensive camera trapping methods were used, wherein a pair of camera traps were placed in 2.5 km x 2.5 km grid cells. Density of prey species in all the Churia range will be estimated using a line transect method.

Swamp Deer Translocation

As per the decision of Ministry of Forest and Soil Conservation, Park officials and NTNC carried out the translocation of 7 swamp deer (male: 2, female: 5) to the Chitwan National Park (CNP). The prime objective of the translocation initiative is to enhance the genetic diversity and establish a genetically and ecologically viable population in CNP. Officers and technicians from park office and SCP were actively involved during the translocation process, with key role of veterinary doctor's team. The detail of translocated swamp deer is presented as follows.

Details of captured and translocated Swamp Deer						
S.N.	Date	Sex	Tag N.	Age	GPS	Measurement(CM)
1	26/04/2017	F	314	2	N28.80828 E080.15665	Shoulder Height:75,Head to Tail Length:145,Tail Length:13,Neck Girth:36,Chest Girth:89
2	26/04/2017	F	333	3	N28.80828 E080.15665	Shoulder Height:103,Head to Tail Length:191,Tail Length:15,Neck Girth:41,Chest Girth:106,Ear In:18,Ear Out:20
3	27/04/2017	F	330	5	N28.80301 E080.17283	Shoulder Height:105,Head to Tail Length:190,Tail Length:20,Neck Girth:54,Chest Girth:108,Ear In:19,Ear Out:17
4	28/04/2017	F	358	7	N28.80523 E080.17027	Shoulder Height:108,Head to Tail Length:191,Tail Length:11,Neck Girth:37,Chest Girth:108,Ear In:17,Ear Out:19
5	28/04/2017	F	345	6	N28.80791 E080.17589	Shoulder Height:103,Head to Tail Length:194,Tail Length:15,Neck Girth:37,Chest Girth:104,Ear In:18,Ear Out:20
6	29/04/2017	M	327	4	N28.86093 E080.17304	Shoulder Height:102,Head to Tail Length:177,Tail Length:13,Neck Girth:39,Chest Girth:98,Ear In:16,Ear Out:19
7	2/05/2017	M	340	7	N28.82285 E080.17024	Shoulder Height:113,Head to Tail Length:224,Tail Length:15,Neck Girth:54,Chest Girth:120,Ear In:20,Ear Out:18

NATURAL RESOURCE CONSERVATION

Project Nursery Operation

To reduce grazing pressure and improve forest cover in the buffer zone area of SuNP, this year alone, SCP produced 21,453 fodder tree saplings of different species, out of which 13,000 fodder tree saplings were distributed

In order to reduce grazing pressure and improve forest cover in the buffer zone area of SuNP, project nursery operations make a significant contribution. During this year alone, SCP produced 21,453 fodder tree saplings of different species, out of which 13,000 fodder tree saplings were distributed in Beldadi, Daijee, Jhaladi, Pipaladi and Bhimdatta Municipality and Dodhara Chandani area. Supports for those areas were provided by ZSL-DI, Awely Green Cap programme and USFWS. In addition, two women groups from the improved livestock milk production subcommittees namely Trishakti group and Suklaphanta distributed 1314 and 1220 saplings respectively to meet the objective of securing Suklaphanta's grassland.



Patrol Road Upgrading

Patrolling is a crucial component that helps check over unwarranted and illegal activities. Thus, through the support of IUCN/KFW project more than 7.5 km road was upgraded in three sites of Hirapurphanta, Arjuni and Majhgaun. This will help improve vehicle movement for patrolling, along with improving the quality of tiger monitoring and facilitate ease of access to the reintroduced blackbuck site in Hirapurphanta.

Forest Use Survey - Household Information on Selected Groups

With the aim to assess the impact of the Awely Green Cap Programme in SuNP area, a household survey was conducted across a total four user committees (UC) and user groups (UG) in Shuklaphanta UC, Sagarmatha UC, Kalikich UC and Bageswori UC. Undertaken in two chapters, the first survey involved a focus on user group chairpersons (total 54), whereas the second chapter surveyed user group households (211 HHs, accounting for 50% UG HHs). Data collected from the survey, along with related findings and recommendations will help inform

future programme implementation and strategy formulation.

Guard Post Construction and Repair

To facilitate effective patrolling inside the core area of SuNP, the Pipariya Guard Post was selected for construction by the park authorities and Bhabani Box Battalion. The new guard post will be an addition to the existing patrolling infrastructure that will assist in monitoring and capacitate with information, especially to the army personnel who are deputed for the protection and the surveillance of the area.

Community Institutional Capacity Support

In order to strengthen the management of user committees, regular support was provided to six buffer zone user committees (BZUC) of Sagarmatha, Shuklaphanta, Kalikitch, Bageshwari, Bedkot and Sundevi in SuNP. The support is important to ensuring overall management and administrative facilitation of the day-to-day responsibilities concerning the park. Further, two user committees (Sagarmatha and Kalikitch BZUC) were also provided with financial and technical support for upgrading of office building. Such tasks are crucial as they help better institutionalize community conservation response within the larger community.

HUMAN-WILDLIFE CONFLICT MANAGEMENT

Mitigation through Power Fence Installation

Large communities that live around the vicinity of the Dhuduwa National Park face continued risk of crop damage by wildlife. After consistent demand from the local community of Parasan in Kanchanpur district, along with recommendation of the buffer zone management committee (BZMC) and District Forest Office, a needs assessment of the area was made. Ascertaining it as a high risk area, 3100 meters of electric fence installation was undertaken in Punarbas Municipality under the Janajagaran Community Forest Users Group. Implementation of this has indicated very positively in terms of reducing human-wildlife conflict in the area. Hereafter, another 3 kilometers is planned to be extended in the coming fiscal year.

Predator-proof Corral and Mesh Wire Fencing

Human-wildlife conflict cases are among the most challenging issues in the field of conservation. SCP is committed to minimize livestock causalities and potential HWC incidents in the area. Dodhara Chadani is a conflict prone area that is much vulnerable to wild animals and incidents of conflict. Thus SCP supported in the installation of more than 120 predator proof corrals in the area after the identification of vulnerable households by the buffer zone user committee (BZUC). Financial support for 80 corrals was provided by IUCN/KFW with the aim to reduce conflict with tiger and contribute to the tiger conservation. Likewise, mesh wire support was provided in the Suklaphanta BZUC in order to protect crops from cattle. About 300 meter fencing was installed in Chandmari area under Suklaphanta BZUC.

3100 meters of electric fence installation, along with 120 predator proof corrals for vulnerable pastoral groups will help relieve scores of farmers from risk of crop damage and livestock depredation from wildlife—a major cause for conflict scenarios among buffer zone communities

CAPACITY BUILDING AND TRAINING

Training for PA staff and Nepal Army on Law Enforcement

With the aim to enhance knowledge and information clarity about different aspects of the



law related to park and wildlife conservation, SCP conducted training on law enforcement for the staffs of SuNP, Nepal Army and SCP. Various sessions and discussions related to the major provisions of the National Park and Wildlife Conservation Act 1973 (BS 2029), Wildlife Reserve Regulation 1977 (BS 2034), Buffer Zone Area Management Regulation 1996 (BS 2053), along with guidelines related to protected area, wildlife reserve and buffer zone management were focused in the training. With this, 32 participants consisting of game scout and Nepal Army personnel, along with those from SCP are expected to exercise and implement legal provisions more effectively.

Training on Patrolling and Information Gathering

CBAPUs have a defining role in minimizing illegal activities as well as creating awareness among communities. Consisting of members from within the community itself, they draw active insight and passion for protecting their resources and thus serve as wonderful agents of change. Given that they work directly in partnership with authorities to better manage park and people attributes, investing on the capacity enhancement of CBAPUs is considered important. Furthering knowledge about information collection, information sharing techniques, and patrolling practices, large numbers of CBAPU members and buffer zone user committees benefited from the training. Besides capacity building, the training will help improve coordination and cooperation between and among the various user committees and also enhance communication and information sharing systems.



Camera Trapping Survey Training

Covering aspects related to camera trap setting and handling, line transect survey, data collection, and GPS handling, an orientation programme and training exercise was organized at SCP before conducting the annual camera trapping and prey base monitoring and survey in SuNP. A total of 4 groups were to be allocated for this exercise consisting of a total of 10 members in each group (6 technicians, 3 Elephant staff and 1 cook). The composition of trainees were made up of wildlife technicians of SuNP, SCP, ZSL Nepal, CBAPU members, University students and Nepal Army personnel who would lead operations in the monitoring exercise. The total area for camera trapping was divided in two blocks consisting of 87 grids wherein a pair of motion sensor camera trap was installed in a center of 2*2 sq.km grids.

SUSTAINABLE LIVELIHOOD ENHANCEMENT PROGRAMME

Community Income Generation

SCP ensures a major focus on creating income generation alternatives and diversifying livelihoods so as to bring about a behavioral change in the community wherein forest dependency is reduced as much as possible. To promote stall feeding practices, grass seed distribution was made to 524 households in Beldadi and Mahendranagerwith the support of Awely Green Cap programme. Likewise support for improved cooking stove for 15 households and biogas for 6 households was also made in the same area. Another 25 livestock feeders were provided in Ganga and Deurali user group of Beldadi BZUC. Cash crop and wildlife repellent farming practices included support for ginger (350 kg) and turmeric (50 kg) seeds to the Janaki, Kalika and Ekata User Group of Suklaphanta BZUC.

Ecotourism Promotion: Home stay Support and Small Credit

Tourism promotion that is based on the fabric of a diverse cultural outlook and rich forest cover has already proven efficient to sustainable conservation practices. As a matter of fact, the transboundary tiger recovery program in Nepal and India envisions that community engagement along with alternative livelihood opportunities will significantly contribute in meeting the tiger doubling objectives by 2022. Thus in order to promote eco-tourism potentials, SCP through the support of ZSL helped establish one Tharu homestay named Tara Tal (in indigenous Tharu language: Khairkendra) in Jonapur, followed by a tourism festival.

Again in Jonapur area, to promote eco-tourism in the buffer zone areas of the National Park, 10 community members were provided with homestay management training organized by BCP in Bardia. Likewise seed money support for ecotourism related initiatives through soft loans was made available through a revolving fund. A loan distribution and regulation was also prepared wherein construction-related activities are undertaken with the joint initiative of SuNP, NTNC, and Homestay subcommittee.



Free Health Camp

Across the southern boundary of buffer zone area of SuNP that connects Asia's second long suspension bridge, there is a remote village with no facilities of transport and proper road. In this village, SCP organized a one-day health camp jointly with Bhabani box battalion and Sagarmatha BZUC. More than 400 community members of Dodhara Chadani area benefited from the camp. Such initiatives are needed to support those communities living in the fringes who matter and continue to make a positive difference to conservation.

Community engagement along with alternative livelihood opportunities will significantly contribute in meeting the country's tiger doubling objectives by 2022. Within this, SCP has been initiating numerous support to ensure that eco-tourism promotion helps to empower local communities





More than 400 locals benefited from the health camp organized by SCP, jointly with Bhabani box battalion and Sagarmatha BZUC in Dodhara Chadani area, a remote village where community members are without ready access to transport and other amenities

Livestock Adoption and Cooperative Set up

The Suklaphanta National Park Management Plan has identified overgrazing in its core and peripheral areas as a major threat to wildlife and ecosystem. Currently more than 22,000 ha of buffer zone communities keep cattle for fulfilling their basic economic needs. Often cattle rearing practices are traditional resulting in poor yields. To address this issue, SCP with the financial support of ZSL-DI has focused on the improvement of cattle through artificial insemination by establishing a veterinary center.

In order to promote activities concerned with stall feeding and improved breeds of livestock, two veterinary/livestock centers were established in Piparya, Suklaphanta BZUC (southern sector), and Asaina (in the northern sector of Trishakti BZUC). Although handed over to the government to ensure its sustainability, SCP continues to regularly support these centers for their proper functioning through lab refurbishment and veterinary staff services. As a matter of fact women run dairy cooperative activities and involve in grass seed distribution, livestock insurance, and stall feeder distribution. Along with these activities, other management-related activities have become a working model for the community to commercialize livestock production. Some of the major activities conducted in this regard were:

a. 65 individuals were directly supported by the subcommittees as part of the effort to increase improved breeds of livestock.

b. Artificial insemination services was provided to 553 livestock (cow and buffalo) of buffer zone area of SuNP in coordination with DLSO.

c. 858 livestock were treated from both veterinary service centers in Badaipur and Pipaladi; 630 domestic livestock were castrated; 1700 livestock vaccinated; 1550 sheep and goats are vaccinated against PPR disease; 27 domestic animals of improved cattle milk production sub-committees were treated.

d. 45 livestock have been insured in order to safeguard farmer investment in case of death or permanent disability of their animals due to diseases, accident or other calamities.

e. Veterinary centers in Badaipur and Pipaladi were upgraded with a vet lab, besides medicine and equipment support, for handing over to DLSO, Kanchanpur.

f. 111 stall feeders were distributed for comfortable feeding to livestock to prevent waste of feed materials in the shed and reduce open grazing in SuNP area.

g. Total milk production from improved breeds of cow/buffalo subcommittees (Shuklaphanta and Trishakti) reached 690 liters per day covering 136 households in 2017 up from 556 liters in 2015.

CONSERVATION EDUACATION AND AWARENESS

Conservation Education Classes

Conservation education initiatives have a far reaching impact on community behaviour and help change attitudes of people to act and make a difference for conservation. SCP undertook a total of 5 conservation education classes in the buffer zone area of Mahendranagar and Beldadi schools. These consist of regular initiatives that are undertaken for grade 8 students who follow a defined curriculum focusing on nature, wildlife and people.

Research Grant

To enhance the capacity of the University students and support their research needs in the course of fulfilling the requirement for University Degree, two students of B.SC Forestry were provided with research grants. Given the sensitivity of human-wildlife conflict, including the case of the 'critically endangered' Bengal Forican bird, the research topics were: 'Human wildlife conflict: A case study from buffer zone of Shuklaphanta Natioanl Park', and 'Conservation status and distribution of Bengal Florican *(Hovbaropsis bengalensis)*'.

Tiger Day Celebration

A one-day special interaction programme for tiger conservation was organized on the occasion of the Global Tiger Day 2016 by SCP, SuNP, Bhawani *bax gan* (army battalion), and BZMC. A total 90 people participated in the event which were made up predominantly of community members from various user committees, user groups, women's groups, and volunteer groups, including journalists who made a special presentation on the role and importance of tiger in ecosystem. Besides making a case for tigers, the event was a great opportunity to understand the attitudes of the community toward tigers and wildlife.

CBAPU Day and Tiger Festival

Recognizing the impassioned effort of the youth in protecting Nepal's forests from illegal logging, poaching and wildlife crimes, the Government of Nepal together with NTNC celebrated the annual Community-Based Anti-Poaching Unit (CBAPU) Day on 3rd March 2017 on the occasion of World Wildlife Day. The event was supported by NTNC under the IUCN /KFW Project. Accompanied with the slogan "Listen to the young voices", prominent attendees in the event included, the Hon. Minister from Forests and Soil Conservation, who was also the chief guest, along with the chair of the event, Chairperson of Buffer zone Management Committee (BZMC) and Mr. Pushkar Bahadur. The national celebration that was organized in Shuklaphanta National Park office compound with the participation of more than 1200 passionate youth members to commemorate the solidarity of youths who are voluntarily contributing to conserve Nepal's rich biodiversity.



Over 1200 passionate youth members took to commemorate the solidarity of youths who are voluntarily contributing to conserve Nepal's rich biodiversity during the community-based anti-poaching unit day celebrations in Shuklaphanta National Park

SCP also supported the Tiger Festival event organized in Dhodhara. CBAPUs have important role in controlling poaching of tigers by creating awareness among the community, and their regular patrolling helps maintain park vigilance. The support was provided to enhance the capacity of the CBAPUs and motivate the community for the conservation of tiger.



FINANCIAL STATEMENTS

FY 2016/17 (2073/74)

NATIONAL TRUST FOR NATURE CONSERVATION

Khumaltar, Lalitpur, Nepal

CONSOLIDATED BALANCE SHEET

As at Ashad 31, 2074 (July 15, 2017)

Amount in NPR

Particulars	Schedule	Current Year Ashad 31, 2074 (July 15, 2017)		Previous Year Ashad 31, 2073 (July 15, 2016)	
Assets :					
Non Current (Fixed Assets)	3.1		**422,465,613.54**		**421,186,125.89**
Investments	3.2		**745,773,629.51**		**720,889,062.57**
Current Assets:			**269,469,309.10**		**240,627,793.90**
Cash and Bank Balances	3.3	*210,885,220.02*		*197,050,957.85*	
Advances	3.4	*12,854,418.62*		*13,410,571.31*	
Accounts Receivable	3.5	*45,729,670.46*		*30,166,264.74*	
TOTAL			**1,437,708,552.15**		**1,382,702,982.36**

Fund and Liabilities					
Endowment Fund	3.6		**68,930,000.00**		**68,930,000.00**
Capital Assets Fund	3.7		**363,735,877.38**		**375,072,157.16**
Exchange Equalization Reserve	3.8		**189,399,094.54**		**214,231,045.76**
Restricted Fund Balance					
Others			**240,228,736.66**		**206,372,535.48**
Opening Balance upto last year		*206,372,535.48*		*161,220,383.95*	
Add : Current year balance	3.9	*33,856,201.18*		*45,152,151.53*	
Accumulated Surplus:			**101,608,536.44**		**139,611,826.16**
Surplus upto Last Year		*139,611,826.16*		*248,004,576.28*	
Less: Deficit adjusted in current Year		-		-	
Add: Current Year Surplus/(Deficit)		*(38,003,289.72)*		*(108,392,750.12)*	
Current Liabilities	3.10		**473,806,307.13**		**378,485,417.80**
Current Liabilities		*115,002,470.06*		*79,327,981.20*	
Non Current Liabilities		*358,803,837.07*		*299,157,436.60*	
(Long term liabilities)					
TOTAL			**1,437,708,552.15**		**1,382,702,982.36**

Significant accounting policies and notes to the accounts form integral part of this statements.

DEEPAK KUMAR SINGH
EXECUTIVE DIRECTOR

GOVINDA GAJUREL
MEMBER SECRETARY

MOHADATTA TIMILSINA
DEPUTY AUDITOR GENERAL

Office of the Auditor General Nepal

NATIONAL TRUST FOR NATURE CONSERVATION

Khumaltar, Lalitpur, Nepal

CONSOLIDATED INCOME AND EXPENDITURE

For The Period 01 Shrawan 2073 to 31 Ashad 2074 (16 July 2016 to 15 July 2017)

Amount in NPR

Particulars	Schedule	Current Year for the year ended Ashad 31, 2074 (July 15, 2017)	Previous Year for the year ended Ashad 31, 2073 (July 15, 2016)
INCOME :			
External Sources		566,176,177.91	459,099,208.08
Internal Sources	3.10	518,155,201.93	342,915,822.21
Total Income		**1,084,331,379.84**	**802,015,030.29**
EXPENDITURES :			
Project Expenditures (Restricted)	3.9	532,319,976.73	413,947,056.55
Sub Total		**532,319,976.73**	**413,947,056.55**
General Management (Internal)			
Personnel Related Cost	3.11	151,595,877.93	119,113,576.09
General Management (Administrative and Support)	3.13	124,026,741.31	101,952,010.97
Project Cost and Support	3.12	280,535,872.41	230,242,985.28
Sub Total		**556,158,491.65**	**451,308,572.34**
Total Expenditure		**1,088,478,468.38**	**865,255,628.89**
Internal Fund Surplus / (Deficit) Transferred to Balance Sheet		**(38,003,289.72)**	**(108,392,750.13)**
External Fund Surplus / (Deficit) Transferred to Balance Sheet		**33,856,201.18**	**45,152,151.53**

DEEPAK KUMAR SINGH
EXECUTIVE DIRECTOR

GOVINDA GAJUREL
MEMBER SECRETARY

MOHADATTA TIMILSINA
DEPUTY AUDITOR GENERAL

TRUST FOR NATURE CONSERVATION NEPAL 1982

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NATIONAL TRUST FOR NATURE CONSERVATION
KHUMALTAR, LALITPUR, NEPAL

CONSOLIDATED STATEMENT OF CASH FLOWS
For The Period 01 Shrawan 2073 to 31 Ashad 2074 (16 July 2016 to 15 July 2017)

Amount in NPR

Particulars	Current Year for the year ended Ashad 31, 2074 (July 15, 2017)	Previous Year for the year ended Ashad 31, 2073 (July 15, 2016)
A. *Cash Flows from Operating Activities*		
Surplus/(Deficit)	(38,003,289.72)	(108,392,750.13)
Deficit adjusted in Current Year	-	-
Adjustment for:	-	-
Add :		
Depreciation on Fixed Assets	10,120,085.73	8,827,775.82
Less :		
Income from Investment	(27,378,741.97)	(17,636,718.62)
Other Income	(24,912,348.66)	(40,952,189.03)
Operating Surplus before Working Capital Changes	**(80,174,294.62)**	**(158,153,881.96)**
Adjustment for Working Capital Changes:		
Advances	556,152.69	801,504.03
Accounts Receivable	(15,563,405.72)	29,804,385.07
Accounts Payable	95,320,889.33	14,996,106.30
Net Cash from Operating Activities (A)	**139,341.68**	**(112,551,886.56)**
B. *Cash Flows from Investing Activities:*		
Less :		
Additions to Fixed Assets	(1,351,413.11)	2,581,442.68
Depreciation on Fixed Assets	(10,048,160.27)	(8,827,775.82)
Increase in Investment	(24,884,566.94)	(48,122,848.79)
Add :		
Interest received from Investment	27,378,741.97	17,636,718.62
Other Income	24,912,348.66	40,952,189.03
Net Cash used in Investing Activities (B)	**16,006,950.31**	**4,219,725.72**
C. *Cash Flows from Financing Activities:*		
Restricted Fund Balance	33,856,201.18	45,152,151.53
Projects	-	-
Endowment Fund	-	-
Capital Assets Fund	(11,336,279.78)	(9,588,519.38)
Exchange Equalization Reserve	(24,831,951.22)	25,246,903.00
Payments:		
Loans	-	-
Net Cash used in Financing Activities (C)	**(2,312,029.82)**	**60,810,535.15**
D. *Net Increase/(Decrease) in Cash and Cash Equivalents (A+B+C)*	**13,834,262.17**	**(47,521,625.69)**
E. *Cash and Cash Equivalents at beginning of period*	**197,050,957.85**	**244,572,583.54**
F. *Cash and Cash Equivalents at end of period (D+E)*	**210,885,220.02**	**197,050,957.85**
Cash Comprises of Bank and Cash Balances		
Cash in Hand	3,914,096.88	1,653,508.60
Cash at Bank	206,696,363.14	195,122,689.25
Gold and Silver Coins	274,760.00	274,760.00
TOTAL	**210,885,220.02**	**197,050,957.85**

DEEPAK KUMAR SINGH
EXECUTIVE DIRECTOR

TRUST FOR NATURE NATIONAL CONSERVATION NEPAL 1982

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NATIONAL TRUST FOR NATURE CONSERVATION

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