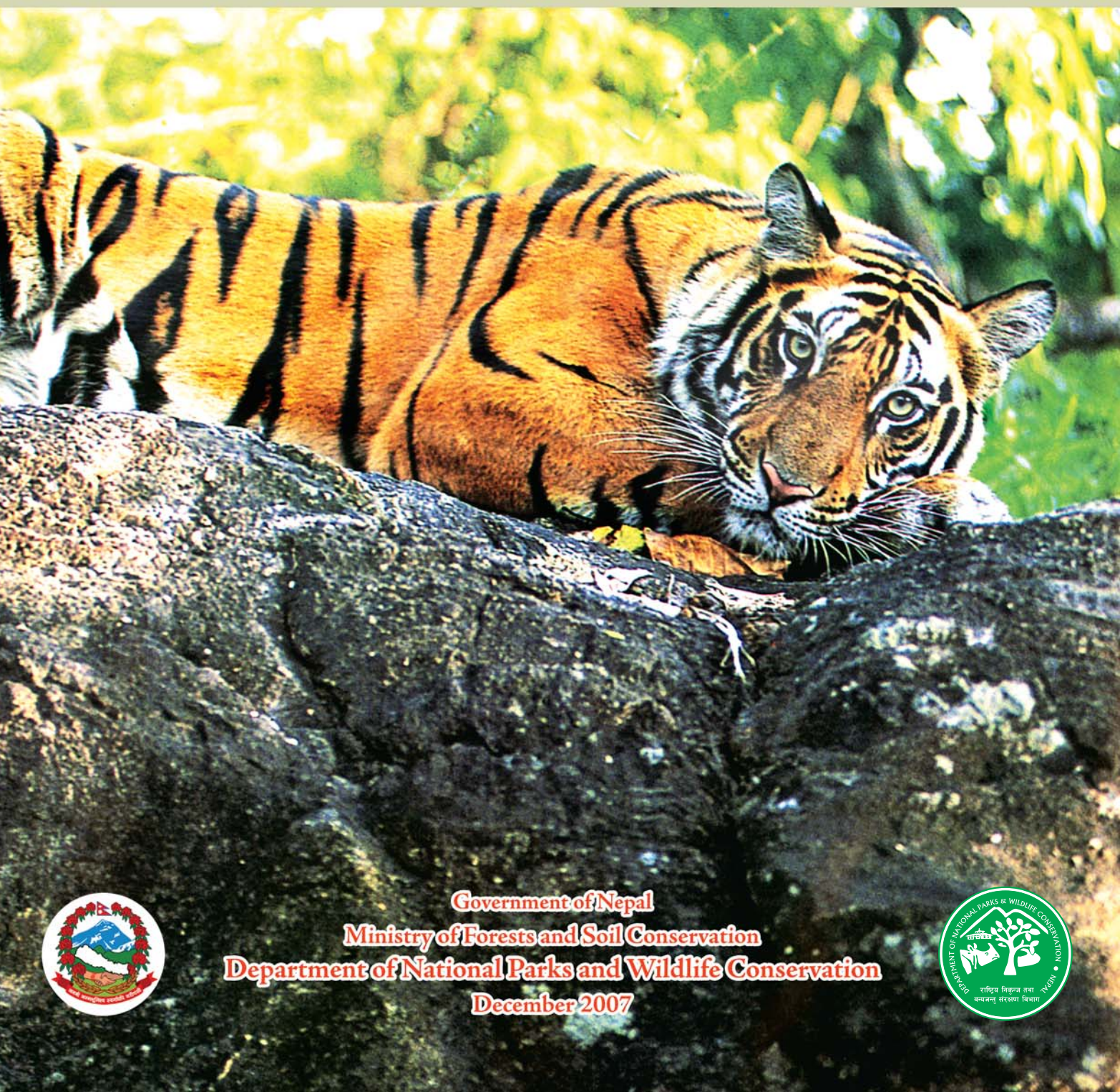


TIGER CONSERVATION ACTION PLAN FOR NEPAL

2008-2012



Government of Nepal
Ministry of Forests and Soil Conservation
Department of National Parks and Wildlife Conservation
December 2007



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Acronyms and Abbreviations

BCC	Biodiversity Conservation Center
BNP	Bardia National Park
BZ	Buffer Zone
CBAPO	Community Based Anti-Poaching Operation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNP	Chitwan National Park
DDC	District Development Committee
DFID	Department for International Development
DNPWC	Department of National Parks and Wildlife Conservation
EIA	Environment Investigation Agency
GIS	Geographical Information System
GO	Gazetted Officers
GoN	Government of Nepal
GPS	Global Positioning System
GTF	Global Tiger Forum
ITNC	International Trust for Nature Conservation
IUCN	The World Conservation Union
MoFSC	Ministry of Forests and Soil Conservation
MIS	Management Information System
NA	Nepal Army
NG	Non-gazetted staff
NGO	Non-Governmental Organizations
NP	National Park
NPWCA	National Parks and Wildlife Conservation Act
NTNC	National Trust for Nature Conservation
PA	Protected Area
PALNet	Protected Areas Learning Network
PWR	Parsa Wildlife Reserve
Rs	Rupees

SAARC	South Asian Association for Regional Cooperation
SNV	Netherlands Development Organization
SWR	Shuklaphanta Wildlife Reserve
TAL	Terai Arc landscape
TCAP	Tiger Conservation Action Plan
TCL	Tiger Conservation Landscape
TCM	Traditional Chinese Medicine
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce
UNDP	United Nations Development Program
UNESCO	United Nations Economic, Scientific and Cultural Organization
VDC	Village Development Committee
WCPA	World Commission on Protected Areas
WR	Wildlife Reserve
WTO	World Trade Organization
WWF	World Wildlife Fund

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Executive Summary

The goal of this Revised Tiger Conservation Action Plan (TCAP) is to preserve, recognize, restore, and increase the effective land base that supports tigers in Nepal, in order to maintain a viable tiger population. The action plan aims at identifying areas that are most important for maintaining the largest, least fragmented land base for tigers; and developing conservation strategies that include and benefit local communities. Ecosystem management, with an emphasis on building partnerships is crucial for maintaining tiger habitats outside protected areas because:

1. the existing protected areas, by themselves, are not large enough to maintain viable tiger populations
2. there are extensive forestlands outside protected areas where tigers currently occur
3. forests outside protected areas are often degraded and need ecological restoration
4. the key to restoring habitat outside protected areas is the inclusion of local people as stakeholders, who directly benefit through conservation actions, and contribute to management decisions.

Threats to tiger populations continue to increase, due to poaching, loss of habitat and illegal trade. Many of the world's tiger populations are restricted to small protected areas, with uncertain long-term viability. Therefore, it is critical to manage entire tiger populations, by maintaining corridors, and by

including both prime habitat, in protected areas, and large tracts of adjacent forest habitats. Preservation of the tiger will ensure the conservation of all the species sharing its habitat, as well as a healthy ecosystem.

With establishment of Chitwan National Park (CNP) in 1973, a network of protected areas (PA) was established all across the country.

The establishment of protected areas undoubtedly protect important wildlife habitat. However, it also initiated conflict, between the park authorities and the local people regarding forest based needs. Subsequently, various management measures have been applied to combine conservation goals with the needs of the local people.

Successful participatory resource management practices and its replication in Buffer Zone management program brought revolutionary change in the concept of protected area management. These change involved the active participation of local communities, in the conservation and management of protected areas and the adjacent buffer zones. In return, local communities get a 30-50 percent share of park income, to be used directly in conservation and community development.

This partnership, between the park management and local communities, has widened the scope of wildlife conservation beyond park boundaries. A significantly degraded area, in the periphery of CNP, has

been restored, in collaboration with local communities. Now, tigers and rhinos occur in the restored habitat; and local people have begun to market elephant rides and overnight stays to visitors in these areas. In collaboration with various organizations, the Department of National Parks and Wildlife Conservation (DNPWC) has launched several projects, in the periphery of protected areas, to address conservation and community needs.

Historically, tigers were distributed continuously across the lowland forests. At present, three isolated populations (CNP, BNP and SWR) remain in Nepal. In these three populations, the tiger census of 1995-1996, minimum tiger populations was found to be 48-49, 30-32 and 15-16 breeding animals, respectively.

In Nepal, conservation efforts, so far, have focused on establishing and managing protected area systems. Unfortunately, protected areas, by themselves, are not large enough to sustain viable tiger populations. For the long-term viability of tiger populations, it is important to consider a landscape approach to management, by treating the entire tiger population as a single management unit. Lack of detailed information, on the spatial location of tigers, is one of the impeding factors for a landscape approach to tiger conservation. Furthermore, wildlife conservation is not a priority for the management and administration of forest areas outside the parks. This requires cooperation among various governmental and non-governmental organizations, and the local communities.

To achieve forementioned goal, five major sets of objectives has been devised, which includes: Tiger and Prey Information, Habitat

management, Conflicts Resolution, Anti-poaching and Anti-trafficking operations, and Transboundary cooperation.

Many of these recommended activities are already being carried out in the field. They need strengthening and systemization, however.

The natural history of tiger is given in the Appendix, to provide general information on the tiger and its biology.

For the implementation of the Action Plan, the existing human resources of the government and the partner organizations will be mobilized.

The community based organizations will also be mobilized where applicable as outlined under various activities of the tiger conservation action plan. The programs pertinent to tiger conservation will be coordinated at three levels of implementation, namely center, landscape and protected area.

The total budget for the action plan for the period of five years is estimated to be US\$ 1,150,000 of which 31% budget has been set aside for anti-poaching and anti trafficking operations, 33% in conflict resolutions, 18% habitat management, 12% tiger and prey information and 6% trans-boundary cooperation. The financial resources that will be available under various programs will also be mobilized as complementary to the tiger conservation.

Considering the areas of interests and scopes of the partners, resources for the action plan could be generated from various sectors including government, donors, international nongovernmental organizations, private sectors, local governments (DDCs and VDCs) as well as the Buffer Zone organizations.



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Foreword

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The tiger, at the apex of the food web, is an indicator species of a healthy ecosystem. Acting as an umbrella species, its conservation includes the preservation of a whole array of species sharing the same habitat. The tiger has played vital role to consolidate the biodiversity conservation. The long-term survival of this magnificent animal is challenging, however, largely due to the loss and fragmentation of its habitat and poaching for illegal trade of its body parts.

Effective implementation of Tiger Conservation action Plan is essential to ensure long-term conservation of the tiger. Rapid shrinkage and fragmentation of habitat in Nepal has made us realize the importance of a landscape approach to tiger conservation. Corridors and connectivity between protected areas within the country as well as between Nepal and India are essential to allow for the safe dispersal of the tiger. Trans-boundary conservation meetings between India and Nepal have extended the scope of mutual conservation interests of the two neighboring countries. Cooperation among international conservation communities is very important to achieve the tiger conservation goal.

The efforts of anti-poaching units and the active cooperation from local people have been successful in curbing the poaching of several endangered wildlife species including the tiger. The Department of National Parks and Wildlife Conservation in collaboration with the WWF Nepal and National Trust for Nature Conservation is conducting annual surveys of parks and reserves in the Terai to assess the status of the tiger.

The revision of the tiger conservation action plan for the kingdom of Nepal 1999 was felt necessary to include program and budget for 5 year and to meet the request of Global Tiger Forum to prepare costed action plan. Thus, the revision was initiated after the formation of task force under the coordination of then Ecologist (Acting Director General, DNPWC) Mr. Shyam Bajimaya with members from Ministry of Forests and Soil Conservation, National Trust for Nature Conservation, WWF Nepal, Department of National Parks and Wildlife Conservation, and Department of Forests. This team led by Mr. Bajimaya deserves recognition for revising this document. Review and comments of Mr. Ananta V. Parajuli, Dr. Krishna C. Paudel, Mr. Tulsi B. Prajapati and Mr. Sagar Rimal from Ministry was useful to streamline the content. Review and expert comments from several scientists, scholars and officials in Nepal and abroad, were valuable in revising this document.

Nepal successfully hosted 4th General Assembly of Global Tiger Forum along with International Tiger Symposium this year in April 2007 and was useful to revise this plan. WWF Nepal provided support to prepare this plan. Save the Tiger Fund supported to host expert meeting to review the plan. I thank them for their generous support. Cooperation from all sectors including government, non-governmental organizations, and communities of Terai Area Landscape was received during the implementation of conservation action plan for the kingdom of Nepal 1999. Similar support is essential for effective implementation of this plan and I am confident that the prey-predator dynamics will be more balanced by its implementation.


Tirtha Raj Sharma
Secretary



Government of Nepal
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Department of National Parks & Wildlife Conservation



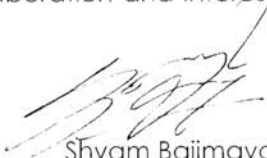
Acknowledgements

On behalf of the Department of National Parks and Wildlife Conservation, I would like to express my deep appreciation to all those who provided contribution in preparing this plan. This plan was reviewed by national and international officials and academia. The comments and suggestions from governmental and non-governmental organizations from Nepal and abroad were provided during the expert meeting held in March 2007. Comments, feedback and insights were helpful in refining this revised action plan. We appreciate the inputs from all of them.

Concerns and problems were shared during the field consultations and interactions in Chitwan and Bardia that formed the major frame for this plan. I thank for their contributions especially the buffer zone institutions, conservation partners and stakeholders. I would like to thank the team members Dr.Shanta R.Jnawali, Dr.Siddharth B.Bajracharya, Dr.Sarala Khaling, Mr.Megh N. Kafle, Mr.Ganesh Pant, Mr.Naresh Subedi, Mr.Chiranjibi Pokhrel, Mr.Shubash Lohani, Mr.Santosh M.Nepal, Mr.Kanchan Thapa and Mr.Ukesh R. Bhuju for their inputs, expertise, and experiences pertaining to tiger conservation in Nepal. I would also like to thank the staff of the Department of National Parks and Wildlife Conservation Mr.Jhamak B.Karki, Mr.Laxmi P. Manandhar, Mr.Buddi S.Poudel, Mr.Tika R. Adhikary, Mr.Puran B. Shrestha, Mr.Gopal P.Upadhyay, Mr.Fanindra R.Kharel, Mr.Baburam Yadav, Mr.Shiv R. Bhatta, Mr.Sher S. Thagunna, Mr.Surya B. Pandey, Mr.Gopal P. Bhattarai, Buffer Zone Management Committee members and other staffs of Chitwan and Bardia National Parks and Parsa and Suklaphanta Wildlife Reserves. We recognize the contribution of former Director Generals late Narayan P.Poudel and Tirtha M. Maskey. Their comments and support in revising this plan are much appreciated.

Special thanks go to Dr.Mahendra K.Shrestha, Director, Save the Tiger Fund who had contributed in the first plan, helped to revise this plan through his expert inputs and helped to organize expert meeting. I would like to extend my sincere gratitude to Mr.Anil Manandhar, Country Representative, WWF Nepal and WWF Network for providing support for the entire work of revising the Tiger Conservation Action Plan. The national and international professionals helped through valuable comments in meeting, through review and providing information which guided us to consolidate the content and I acknowledge their support.

The revision of this Tiger Conservation Action Plan has been possible due to the deep interest of many people and organizations. I hope that these characteristics of collaboration and interest will also continue in its implementation.


Shyam Bajimaya

Acting Director General

1.1 Introduction and Background

1.1.1 Global and National Scenario

The tiger, one of the world's most magnificent mammals, is highly endangered and faces extinction in the near future, if the present trend of poaching and habitat degradation continues. Two of the eight tiger subspecies, the Balinese and Caspian, are already extinct; and the Javan tiger is thought to have disappeared in the 1980s (Table 1). A drastic rise in tiger poaching was first noticed in 1990; by 1992, there were reports of severe poaching from across the tiger's range, strongly impacting all five remaining subspecies.

The primary consumers of tiger products are Chinese communities throughout the world, where tiger parts-in the form of tiger bone wine and tiger plasters-are used as a traditional medicine. The sale of these products has been documented in every major Chinese community that has been examined. If the present rate of poaching continues, many tiger populations might be extinct in near future. The Royal Bengal tiger (*Panthera tigris tigris*)

was once widespread across south Asia. Great hunts were organized by the Rana rulers in 19th Century-to honor European royal visitors and Indian princes where several hundred tigers were killed at a time. Despite this, there was little effect on the general tiger population: there were significant intervals between hunts; these hunts were held over large spans of high quality habitats, which contained an abundance and variety of prey species. Hence, the tiger population was able to recover rapidly, even after such losses.

As human populations converted the rich alluvial plains to agricultural lands, however, tigers gradually became confined to the protected forest areas. By 1906, the tiger was exterminated in Pakistan (Roberts 1977), but there was still an estimated 40,000 tigers on the Indian subcontinent at that time (Gee 1963). The clearing of forests accelerated sharply after World War II, however, resulting in extensive loss and fragmentation of forest lands.

Table 1. The Status of the Tiger (*Panthera tigris*) in the World

Tiger Sub-species	Range Countries	Population
Royal Bengal Tiger		3,176 – 4,556
Panthera tigris tigris	Bangladesh	62-362
	Bhutan*	67-81 (adults)
	India	2500-3750
	Myanmar, Western	124-231
	Nepal*	93-97 (adults)
Caspian Tiger P. tigris virgata	Formerly: Afghanistan, Iran, Chinese Turkestan, Russian Turkestan, Turkey	Extinct 1970s
Amur Tiger P. tigris altaica	China, North Korea, Russia*	360-406
Javan Tiger P. tigris sondaica	Java, Indonesia	Extinct 1980s
South China Tiger P. tigris amoyensis	China	20 – 30
Bali Tiger P. tigris balica	Bali, Indonesia	Extinct 1940s
Sumatran Tiger P. tigris sumatrae	Sumatra, Indonesia	400 – 500
Indo-Chinese Tiger P. tigris corbetti	Cambodia, China, Laos, Malaysia, Eastern Myanmar, Thailand, Vietnam	1,227 -1,785
Totals		5,183- 7,277
Rounded Totals		5,200- 7,300

* Note: Most estimates are educated guesses, based on the reports from range countries. Estimates for Bhutan, Nepal, and Russia provided more reliable numbers.

Figures for Bhutan, Nepal, and Russia are for the adult breeding tigers counted. Tiger specialists consider such figures more realistic, because many cubs are unlikely to survive to maturity.

Source. WWF-World Wide Fund for Nature 1999

Furthermore, since 1990, reports from across the tiger's range indicate that there has been a sudden, drastic, Asia-wide increase in tiger poaching (Jackson 1993); an estimated 25 % of Russian tigers have been poached since 1992 (Miquelle et al. 1993). Sanderson et al, 2006 studied current tiger distribution in its historical ranges and reported that tiger may have vanished in as much as 40 % of their remaining habitat in last 10 years, but some areas, including Terai Arc Landscape

and Russian Far East, have stable or even increasing tiger numbers.

The Royal Bengal tiger now occurs only in small, isolated protected areas. Most of these areas are not large enough to sustain long-term, viable populations. To address issues such as forest fragmentation, habitat degradation, and poaching-conservationists and resource managers must shift their scale of management, from individual parks and wild-

life reserves/sanctuaries, to larger scale units that encompass entire tiger populations (Smith et al. 1998). This requires management to bridge several jurisdictions and ultimately address, not only the needs of tigers, but also the needs of local people.

1.1.2 Nepal Perspective

In Nepal, tiger habitat has been protected since 1846, when the first Rana Prime Minister ordered that the rhinoceros and its habitats, primarily in the Rapti and Reu Valleys of Chitwan, be saved (Caughley 1969, Shrestha 1998). Early in the 19th Century, the government of Nepal discouraged settlement and agriculture in the lowlands, or the Terai, in order to form a buffer of malarial forests, as a defense for invading armies (Gurung 1983, Mishra and Jefferies 1991). Human disturbance was minimal; the few settlements primarily consisted of small patches of jungle, cleared by the Tharu people the oldest inhabitants of Chitwan, who were believed to have developed immunity against malaria (Philips 1925). With the collapse of the Rana regime in 1951, however, much of the wildlife habitat in Chitwan suffered heavy destruction (Talbot 1959, Gee 1959, Spillet and Tamang 1967).

In the 1950s, the government enacted a malaria eradication campaign and a resettlement program, which dramatically altered Chitwan's human population distribution and density, and profoundly impacted land use patterns (Gurung 1983). Although resettlement programs were intended to provide land for people with no land holdings, many individuals (of varied economic statuses and ethnic back-

grounds) moved into the Chitwan Valley, from the hill districts. Population in the Chitwan District increased from 42,800 in 1954 to 194,000 in 1971, and dramatically altered forest cover (Gurung 1983). Between 1961 and 1977, 65 percent of the forests in Chitwan were destroyed, and the land was converted to cultivation (Gurung 1983, Mishra and Jefferies 1991).

Most of the immigrants to the Chitwan Valley settled along the Rapti River, destroying tall grasslands and riverine forests, home to a variety of wildlife. In 1964, the late King Mahendra declared the southern part of the valley, across the Rapti River, as the "Mahendra Mriga Kunja"; more than 22,000 people were moved out of the park (Willan 1965, Upreti 1973, Shrestha 1998). In 1973, to protect the remaining forest lands and wildlife from further degradation, the government enacted the National Parks and Wildlife Conservation (NPWC) Act, 2029; and the park was declared to be the Chitwan National Park (CNP), the first national park formally established in Nepal. Parallel to the establishment of CNP, the Tiger Ecology Project was initiated in the early 1970s as a joint venture of the Government of Nepal, the Smithsonian Institution, and World Wildlife Fund to conduct research on the tiger. Based on the recommendations of Tiger Ecology Project, the park boundaries were extended in 1977, to its current size of 932 km² (Mishra and Jefferies 1991, Shrestha 1998). Furthermore, as an extension to CNP, the Parsa Wildlife Reserve (PWR) was established in 1984, to maintain the continuity of habitats, based on the ecosystem management approach.

Concurrently, a network of protected areas (national parks and wildlife reserves) was established throughout the country. The establishment of protected areas undoubtedly protected important wildlife habitat. It also initiated conflict, however, between park authorities and local people, because they were denied easy access to protected areas, where they attained basic needs such as fodder, firewood. In recognition to the public outcry, the government decided to open protected areas in the Terai to collect thatch grass (Thatch grass and grass reeds are used as local roofing and building materials).

Community participation, in natural resources management, has been widely recognized in Nepal. We are the pioneers in combining conservation goals to meet the needs of the local people. Such indigenous systems now form the basis for users' group management of the forests, watersheds and buffer zones; these systems also support wildlife conservation.

In support of the public sentiments, the fourth amendment of NPWC Act, 1993 provisioned buffer zones in and around the national parks and wildlife reserves. Accordingly, 30 to 50 percent of the total revenue of the protected areas could be plowed back for conservation and community development. Following the formulation of the Buffer Zone Management Regulations (BZMR) 1996 and Buffer Zone Management Guidelines (BZMG) 1999, buffer zones were first declared in CNP and BNP. The buffer zone program has brought a revolutionary change in the management concept of protected areas allowing local communities to organize themselves for management of natural resources and biodiversity conservation.

Apart from the ecological significance, tiger is culturally reflected in the philosophies of Sanatan Hinduism and Buddhism.

1.2 Status and Distribution

Historically, tigers were distributed continuously across the lowland Himalayan forests. Surveys, between 1987 and 1997, documented that only three isolated tiger populations remain in Nepal (Smith et al. 1998) (Figure 1).

The Chitwan population occupies the largest area (2,543 km²); 75 percent of the population lives within the protected areas, while the remaining 25 percent lives outside. The Bardia population, 180 km west of

Chitwan, occupies a land base of 1,840 km²; Bardia National Park (BNP) encompasses 51 percent of this land base. Between 1987 and 1997, tigers west of the Karnali River became increasingly isolated from the core of the Bardia population. Without habitat restoration, this area is currently too small, and does not have the prey density to support a separate, viable tiger population. The third population resides in Shuklaphanta in western Nepal. The land base is only 320 km², but the prey

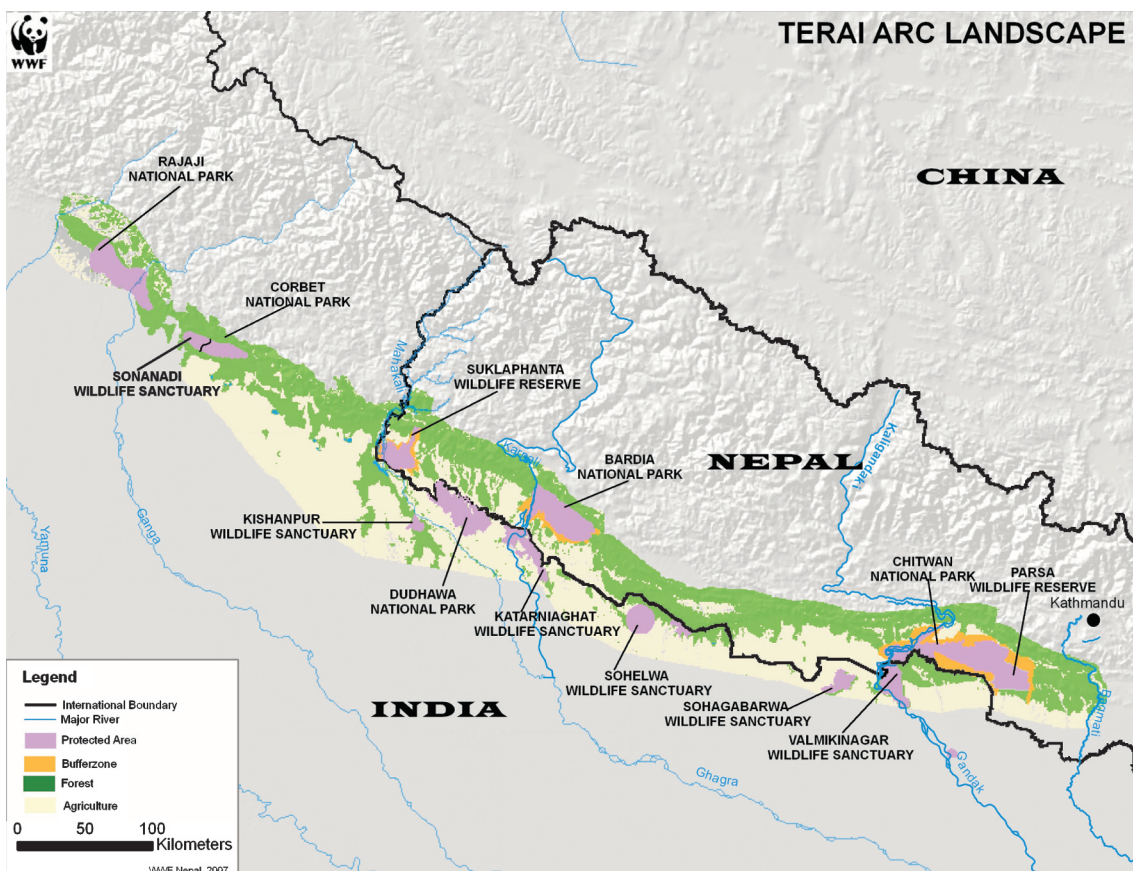


Figure 1. Tiger Conservation Landscapes in Nepal

density is high. The Shuklaphanta population was formerly connected to tiger habitat in India, but is now becoming isolated. The tiger census of 1995-1996, in the protected areas of Chitwan, Bardia and Shuklaphanta, estimated tiger populations to be 48-49, 30-32, and 15-16 breeding adults respectively.

The estimated population of tigers was between 98 and 123 breeding adults as per the census

carried out in 1999/2000. In addition to this, seven tigers were reported from the Barandabhar forest in 2005 using camera traps and other indirect methods (KMTNC. 2005). The preliminary findings of the recent research on tigers outside the protected areas have revealed that the potential habitats in Kailali, Jhapa and Trijuga (Gurung et 2006 claims no tiger east of Bagmati River) could hold certain number of tigers (Table 2).

Table 2. Status of Tiger Populations in Nepal

Location	1999/2000		2005	
	Adult	Total	Adult	Total
Chitwan National Park*	50 to 60	173 to 209	50 to 60	173 to 209
Barandabhar*	-	-	-	7
Bardia National Park**	32 to 40	111 to 139	32 to 40	111 to 139
Shuklaphanta Wildlife Reserve	16 to 23	56 to 80	16 to 23	56 to 80
Kailali, Trijuga and Jhapa***	5 to 7	-	5 to 7	20
Total	98 to 123	340 to 350	103 to 130	360 to 370
<p>* Due to different techniques used in census, total number of tigers could not be estimated.</p> <p>** Based on the results of camera trapping in the Karnali flood plain.</p> <p>*** Not included in the total tiger population</p> <p>Sources: DNPWC/ 2006. Karki 2006</p>				

1.3 Efforts and Achievements

1.3.1 Conservation Policy

Since the preparation of the tiger conservation action plan for Nepal in 1999, several efforts have been made and some positive results have been achieved to date.

The status of tiger and their habitat was continually monitored showing gradual improvement in the quality of habitat. Priority tiger habitats identified were further refined and improvement/restoration of the habitat quality and conservation/mitigation efforts has shown the signs of tiger and prey movements in some of the corridors. Studies were carried out in conflict and biological aspects in tiger and its prey base. Conservation education program along with the landscape approach including community based anti-poaching operation added by poaching control efforts and reduction of park people relationship has improved the overall conservation of tiger. The development of domestic partnership and transboundary initiatives in local and national level may improved the trade control and conservation inputs in the year 2000-2005 during the implementation of TCAP.

The four protected areas with the key tiger habitats (management plans of CNP& BNP-2001-2005; SWR-2006/07-2010/11 and PWR-under preparation) are managed in planned manner by implementing management plans. These PAs form the core parts of the Terai Arc Landscape. Tiger

conservation has been explicitly mentioned as a priority in the management plans, as well as in the Nepal Biodiversity Strategy 2002 and its Implementation Plan 2006. These four protected areas are managed by 13 professionals, 312 subordinate staff and 152 hattisaes, and augmented with over 1,700 army personnel.

Buffer zones have also been in full operation in these PAs with 77 VDC in 10 districts, thus, paving a clear way to mobilize the local communities. The BZ institutions in the four PAs have created a biodiversity trust fund of Rs17.5 million.

Research activities on tiger have been encouraging in the last five years. DNPWC, NTNC, WWF, ITNC (International Trust for nature Conservation) have continued their joint efforts of camera trap monitoring in the three major protected areas, Chitwan, Bardia and Shuklaphanta. Under the joint efforts of DNPWC, NTNC, and WWF, 94 individuals (37 males and 57 females) have been trapped in the three locations between April 2000 and December 2001.

Along with the government bodies, a number of nongovernmental organizations like NTNC, WWF and IUCN have emerged in the last few years for tiger conservation.

The other conservation efforts that have eventually become favorable for tiger conservation are the successful community

forests and sustainable livelihoods in the lowlands. The number of forest user groups is increasing in Terai districts with 1,477 till February 2005.

A network of village-rangers was successfully established for mapping the meta-population structure of tigers throughout Nepal (Gurung, B. 2002). There is a growing interest among the youths in conservation of tiger and other wildlife. Some youth groups have carried out research works, habitats maintenance and even antipoaching operations. These self emerged groups have become change agents in the local communities through their public awareness campaigns for saving tigers.

The Community Based Anti-Poaching Operation (CBAPO) has been formed and institutionalized in Khata and Basanta corridors of the TAL Nepal. Local communities organized in the CBAPOs regularly patrol the community and national forests to control illegal activities such as illegal logging, encroachment, poaching etc. Similar efforts have been initiated in Chitwan and other PAs.

In the policy front, the 2002 Nepal Biodiversity Strategy has stipulated for the keystone species conservation plan. The plan stresses upon the population surveys, monitoring, protecting key habitats, and relocation and restoration of certain species (NBS 2002). Similarly, the Nepal Biodiversity Strategy Implementation Plan which was finalized in 2006 contains project outlines on two major activities as follows:

1. Implement the Tiger Action Plan 1999 (survey and monitoring, habitat improving, public awareness, community

development, anti-poaching, trans-boundary cooperation and networking), and

2. Upgrade the baseline information on tigers and its prey base outside protected areas.

The anti-poaching operation strategy has been drafted out and is in the process of approval at the Ministry of Forests and Soil Conservation. The strategy addresses the three key aspects of tiger conservation, such as i. patrolling, ii. information collection, and iii. operations and CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) implementation in towns and cities.

1.3.2 Management Plans

Tiger conservation is one of the priority activities outlined in the management plans for the lowland protected areas namely Parsa and Shuklaphanta Wildlife Reserves, and Chitwan and Bardia National Parks. The target of the management plan is to increase tiger population by 10 % within the five year period of plan. The major activities include monitoring of tigers using camera-trap and pugmark, special arrangement to handle aged and man-eaters. Participation of buffer zone community is a strategy adopted in the management plans.

In the WWF Global Tiger Conservation Strategy Workshop (September 4-8, 2000, Indonesia), the Terai Arc was identified among the seven focal tiger landscapes¹, where the chances of long-term tiger conservation were best and its involvement would be most valuable (WWF International. 2002). On the

basis of the Tiger Dispersal Model, six Tiger Conservation Landscapes-TCLs² have been identified in TAL, such as follows:

- Three Level I- TCLs:
Chitwan–Parsa–Valmiki,
Bardia–Banke, and Rajaji–Corbett;
- Two Level II - TCLs: Dudhwa–Kailali
and Suklaphanta–Kishanpur; and
- One Level III -TCLs: Dang–Churia.

The 11 protected areas³ within Terai Arc Landscape provide the critical habitats for the tigers (WWF 2004). Along with the improvements of the protected areas management, the immediate objectives of TAL-Nepal include:

- Restoration of key corridors connecting protected areas;
- Elimination of poaching in wildlife corridors and protected areas ; and
- Strengthening community-based anti-poaching efforts along critical forest corridors in Basanta and Khata, and buffer zones of lowland protected areas (WWF. 2004).

1.3.3 Global Commitments

Nepal's global commitments for tiger conservation have been much reflected in various national and international programs including the Global Tiger Forum, CITES,

CBD and other conservation programs.

Considering the overall achievements in conservation including tiger conservation, Nepal's lowland protected areas have been internationally recognized. The 5th World Parks Congress held in South Africa in September 2003 recognized the Chitwan National Park as the best managed park. The Terai Arc Landscape (TAL) has been selected as one of the ten field learning sites for the Protected Areas Learning Network (PALNet). In fact, the fundamental concept of TAL was strategically adopted at the WWF Global Tiger Conservation Strategy Workshop held in Anyer, Indonesia in September 2000.

1.3.4 Human Resource Development

Existing human resource for tiger related research and monitoring has been priority; which is reflected in ongoing monitoring and research work conducted by protected areas staffs.

While assisting in the tiger research activities and participating in training programs, the park personnel learned tiger survey techniques especially camera trapping, tracking pugmarks and other signs. In the training need assessment of the DNPWC personnel, the topics tiger and its prey were identified as priority areas of learning (DNPWC 2003).

¹ Russian Far East (Russia), Terai Arc (Nepal and India), Satpuda-Maikal range (India), Sundarbans (Bangladesh and India), Lower Mekong Forests (Cambodia, Lao, and Vietnam), Taman Negara-Belum-Halabala (Malaysia and Thailand), and Kerinci Seblat/ Bukit Barisan Selatan (Indonesia)

² previously known as Tiger Conservation Units

³ Nepal 4: Parsa Wildlife Reserve, Chitwan National Park, Bardia National Park, and Shuklaphanta Wildlife Reserve; India 7: Valmikinagar Wildlife Sanctuary, Sohewla Wildlife Sanctuary, Katarniaghat Wildlife Sanctuary, Dudhwa National Park, Kishanpur Wildlife Sanctuary, Corbett National Park, and Rajaji National Park

These observations indicate that capacity of DNPWC personnel has been enhanced in the recent years.

At the landscape level, major research work has been completed in November 2004. The research was on relative ungulate abundance in a fragmented landscape with the implications for tiger conservation (Shrestha. 2004). Similarly, multidisciplinary research work on tiger-human conflict has been conducted in protected areas involving PAs staff (Gurung et al 2006). Similarly, study on Tiger-Prey Relationship was also completed in Chitwan National Park in 2005 (Bagale. 2005).

1.3.5 Field Implementation

During the ten years period of 1994-2004, twenty persons have been prosecuted on the crimes pertinent to tiger poaching in Chitwan alone. The total seizure of tiger bone was 48.8 kg, of which 5.8 kg was presumed to be from India. During the period of July-October 2004, four tigers were poached in Chitwan. During the period of January 2004 and September 2005, nineteen persons were arrested for the tiger related cases in Kathmandu and elsewhere. The confiscations of items include 21 pieces of tiger skins (DNPWC 2006).

Handling of man-eating tiger was a major task during the period between 2001 and 2005. During that period, 30 people were killed by tigers outside the protected area and were compensated with Rs 0.75 million. While, 17 injured persons were also compensated with Rs 0.06 million for the

treatment. Criteria for compensation and treatment disbursement have been outlined by the park authorities in cooperation with the buffer zone representatives.

The relief fund has been established in Bardia National Park with amount totaling Rs. 1.3 million of which only the interest will be used for the treatment, cremating the dead bodies, and livestock depredation. So far a total of Rs. 0.28 million has been compensated during the period 2001-2005.

In Suklaphanta Wildlife Reserve, tiger human conflict has been minimal since there has not been any case of human casualty. However, there are a few reports of cattle lost to tigers inside the reserve for which no compensation will be given.

1.3.6 Institutional Strengthening

Buffer zones have been declared in all the four tiger range protected areas (PWR, CNP, BNP and SWR). Following the extension and education programs launched by the conservation organizations, several local groups of conservationists have come forward to save tiger and other wildlife. There are a few examples of how the local groups like Rhino Tiger Conservation Society, youth's anti-poaching groups and others have been involved at the community level against poaching and for wildlife rescue. Similarly, biodiversity conservation subcommittee has been formed in Chitwan which awards a letter of appreciation for contributing in rescuing of tiger as well as operates relief fund mechanism.

1.4 Challenges and Opportunities

Threats and challenges to the tigers in Nepal can be viewed from five different aspects, such as: i. Tiger and Prey, ii. Habitat, iii. Conflicts with Humans, iv. Antipoaching and anti-trafficking, and v. Transboundary.

1.4.1 Tiger and Prey

1.4.1.1 Status

Considering its endangered status, tiger is in Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), and Appendix I (List of Protected Species) of the National Parks and Wildlife Conservation Act (1973) of Nepal. The total population of Royal Bengal Tiger throughout its range has been estimated around 3,176- 4,556 individuals. In Nepal, its estimate population is around 123 adults and 350 individuals. A ratio of 2.8 cubs and sub adults per breeding adult has been used to calculate the number of tiger population (Smith et al 1998). (See Chapter 1.2 Status and Distribution of Tigers).

1.4.1.2 Distribution

Historically, tigers were distributed continuously across the lowland forest. It is now only occurs in small, isolated protected areas in Nepal. The protected areas are not large enough to sustain long-term, viable tiger populations. The tiger population in Nepal is decreasing due to various reasons. Surveys between 1987 to 1997 documented that only three isolated populations that remained in the country are

Chitwan-Parsa complex, Banke-Bardia complex, and Shuklaphanta-Kailali complex (Poudel N. 2000, Gurung et al 2006).

Sporadic distribution of tigers has been recorded in outside protected areas in corridors and connectivity of Terai Arc Landscape.

1.4.1.3 Density

Tiger density is positively related to prey abundance particularly wild ungulate (Smith 1998; Karanth & Smith 1999; Sunquist et.al 1999 cited in Shrestha M. 2004). Thus, information on habitat quality as measured by prey abundance is critical for guiding tiger conservation action from local management interventions to regional conservation planning in the focal landscape (WWF 2002).

1.4.1.4 Prey base

A threshold of prey abundance that indicates poor and good quality habitat and intimately reflects potential for presence of breeding tiger is important for developing necessary conservation action (Smith et. al 1998; Smith et. al 1999 cited in Shrestha, M. 2004).

Based on comparison of number of pellet groups Chital, a medium sized tiger prey species, was dominant among the ungulates

in the Terai landscape. Sambar was an important prey species in protected areas (12%) but much less common in national forests (3%). Wild pig, barking deer, blue bull, langur/monkey, and livestock were more abundant in national forests and buffer zone than in protected areas. Swamp deer and hog deer were recorded only in protected areas. The distribution of blue bull was very restricted; this species was found only in the dry scrub forest. Domestic livestock (cow, water buffalo) contributed 26% to the total ungulate composition outside protected areas. Sambar and barking deer were more abundant at higher elevations with rugged terrain than in lower elevations (Shrestha 2004).

1.4.2 Habitat

1.4.2.1 Shrinkage

The tiger habitat today has shrunk to just 7 percent of the historic range and the biggest tiger landscapes now are in the Russian Far East and northeastern China and along the Nepal-India border, according to a comprehensive scientific study of tiger habitat jointly released by the World Wildlife Fund, the Save the Tiger Fund and the Wildlife Conservation Society (2005). According to the report, the tigers have 40 percent less habitat than they did a decade ago. In an average, a single tiger requires nearly 50 km² of good quality forests. In Nepal, the figure seems to be much less. The Bardia and Chitwan populations are estimated to have one tiger in 37 km², and the Shuklaphanta population to have one tiger in 20 km² (Smith et al 1987).

1.4.2.2 Degradation

Establishing protected areas is not enough for tiger conservation. The potential tiger habitat outside the PAs do not support adequate size the population of tigers to ensure long-term viability (Smith et. al 1998; Smith et al. 1999 cited in Shrestha M.2004). In many parts of tiger's range, ungulate assemblages with no large or medium sized prey (cervides or bovids) support low tiger density and reproduction rate declines in an impoverished habitat with low prey base (Karanth & Smith 1999 cited in Shrestha M.2004). Decline in prey base as a result of habitat degradation and widespread poaching has limited land base that can support tigers.

The first threat is the loss and degradation of its habitat. This is due to the conversion of forests to agricultural lands, and the resulting excessive human and livestock pressure. These, in turn, increase competition for food, resulting in low prey availability.

1.4.2.3 Fragmentation

The second threat is the fragmentation of its habitat. This causes habitat islands, which, in turn, creates a fragmented population. The small habitat means limited dispersion of new individuals, which results in high competition for the available habitat. With this limited dispersion also comes the risk of inbreeding.

Fragmentation of the tiger habitats are the major concerns identified in the 1999 Tiger Action Plan. If populations are connected, population viability should be increased. Under the Terai Arc Landscape programs, attempts are underway to restoring forest habitats linking the protected areas.

1.4.3 Conflict with humans

As human populations expand and natural habitats shrink, people and animals are increasingly coming into conflict over living space and food. The impacts are often huge. People lose their crops, livestock, property, and sometimes their lives. The animals, many of which are already threatened or endangered, are often killed in retaliation or to 'prevent' future conflicts. Human-wildlife conflict is one of the main threats to the continued survival of many species, in many parts of the world, and is also a significant threat to many local human populations. And, if solutions to conflicts are not adequate, local support for conservation also declines.

Over the last quarter of century 88 people have been killed by tigers in and around Chitwan National Park. The trend of human loss has been increased significantly from an average of 1.5 person per year (1979-1998) to 8.25 per year since 1999. The increasing trend of people killed was significant in the buffer zone than inside the park. On the other hand, a total of 37 tigers were involved in killing 88 people. Of these, 17 were removed due to such man eating behavior (Gurung et. al. 2006).

The park personnel in cooperation with the buffer zone representatives developed a set of management criteria for relief and compensation fund for tiger related incidents (DNPWC 2006).

In Asia, tigers are suffering not only from significant loss of habitat but also from a decline in their prey species. As a result, there has been increase competition for limited food by which more and more tigers are forced to search for food among the domestic

livestock that many local communities depend on heavily for their livelihood. When livestock predation occurs, tigers are often captured, killed in retaliation or actively persecuted in an effort to prevent similar events happening in the future. Sometimes the carcasses of livestock killed by tigers are baited in order to poison the tiger when it returns to its kill, also killing any other animal that chooses to opportunistically feed on the carcass. Tiger prey species are also killed by villagers in retaliation for destroying essential crops, further exacerbating the problem by reducing the availability of the tiger's natural source of food.

1.4.4 Anti-poaching and Anti-trafficking

1.4.4.1 Poaching

During the period 2004-05, poaching incidents as are few in the protected areas, only four reported case of tigers being killed by poachers was found in Chitwan National Park. However, magnitude of seizure across the country including the capital city of Kathmandu indicated that poaching could be high in the country (Table 3). During the period from January 2004-September 2005, 19 persons have been arrested on the charge of poaching. Similarly, during the period 1994 -2004, 20 persons were prosecuted on the cases related to tiger poaching, and 48.8 kg of tiger bone was also seized from them (DNPWC 2006).

During the period (1988-2005), Bardia National Park attested 20 casualties of tigers (8 M, 10 F, and 2 U). Of them, one poaching case, and nine cases were fighting, and the remaining 10 cases were either due to natural death, flood or others (BNP 2006).

Table 3. Poachers Arrested and Tiger Parts Confiscated

SN	Date	Location	Persons Arrested	Wildlife Parts Confiscated
1	January 9, 2004	Kathmandu	2	Tiger skin and bones
2	April 18, 2004	Banke	1	Six pieces of tiger skins
3	April 26, 2004	Chitwan	2	Tiger and rhino skins
4	June 12, 2004	Kathmandu	2	219 pieces of tiger bones (4kg)
5	July 12, 2004	Kathmandu	1	Two tiger skins, eight leopard skins, five sacks of wildlife bones
6	July 18, 2004	Nawalparasi	2	Two pieces of tiger skins
7	June 5, 2005	Chitwan	2	Tiger skin trading
8	June 17, 2005	Kathmandu	1	One tiger skin and one leopard skin
9	August 11, 2005	Chitwan	1	
10	September 1, 2005	Rasuwa	5	Five tiger skins, bones 113.5kg, leopard skins 36, otters skins 238 pieces
11	2006		2	2- Tiger Skin
12	2007*		2	11 kg tiger Bones and 5 Leopard Skin
13	2004-2007		26	25-Tiger Skin; 128.5 kg Tiger Bones

Source: DNPWC 2007; as on 31/03/2007.

1.4.4.2 Illegal trade

In the early 1990s, it became evident that medicinal trade in Tiger bone threatened to drive the already endangered Tiger to extinction in the wild.

Nearly every part of the Tiger has a value. It is believed that at least one tiger is killed daily for its use in traditional Chinese medicine. An increased demand for endangered tiger parts exists throughout the world. The rising demand for tiger parts and rapid increase in price of tiger bone continues to be an irresistible incentive to poachers. Poaching and smuggling of tiger parts are interrelated cases. A series of layers of networks play their roles from luring the local shooters to middle men to international smugglers to illegal sellers and finally the consumers.

Nepal obviously is a transit country for the illegal trade between India and China, and also a country of origin of tiger parts. The Environment Investigation Agency's (EIA) recent report The Tiger Skin Trail described Kathmandu as a "staging point" for illegal skins brought in from India to be sent to Tibet. Available information indicates that although Nepal is no longer the hub for skin trade that it was in the early 1990s (EIA 2004), it is used as a transit point for illicit trafficking of wildlife parts and derivatives.

Kathmandu is believed to be one of a transit point for the underground trade centers in the region. Commodities include Shahtoosh, fur, musk pods, bear bile, tiger skin and bones, ivory, rhino horn, leopard parts and live animals (turtles, birds). Recent seizures of wildlife parts also indicate that Nepalese

territory is increasingly being used to transport these goods to the end users in Tibet/China, East Asia and even to the west.

There is a well-connected nexus for smuggling these commodities linking Nepal with China and India. Further, Nepal's porous border and its extensive international airline connections have made it an easy flow area (Wright and Kumar 1997). A single case of a poacher named Sansar Chand reveals the magnitude of volume of illegal trade in wildlife parts especially tiger parts, and also its network across the international borders.

At the 12th conference of the parties to CITES (November 2002 in Santiago), the resolution was passed to replace word 'tigers' by 'Asian Big Cats (Tiger, Snow Leopard, Clouded Leopard, Common Leopard and Asiatic Lion).

The Resolution noted the impact of illegal trade in these species and calls for a number of measures including legislation and enforcement controls, and recommends the Secretariat to expand the remit of the CITES Tiger Enforcement Task Force to include all Asian Big cat species and calls upon governments, intergovernmental organizations, international aid agencies and non-government organizations to provide funds and other assistance.

1.4.5 Transboundary Cooperation

1.4.5.1 Global Tiger Forum (GTF)

Following the international symposium on tiger held at New Delhi in February 1993 the Global Tiger Forum was created in March 1994 by 11 tiger range states and others. So far, seven tiger range countries viz.

Bangladesh, Bhutan, India, Cambodia, Myanmar, Nepal and Vietnam have become members of GTF by ratifying its statutes and regulations. In addition, United Kingdom has formally joined the Forum and the Government of Canada is seriously considering the issue of joining the Forum. Of the international nongovernmental organizations (NGOs), WWF-International and International Fund for Animal Welfare (UK/USA) have also joined the Forum.

As decided at the 8th meeting of the Executive Committee meeting of the GTF, an international symposium on tiger was convened in Nepal on 16th-20th of April 2007. On the occasion, the 4th General Assembly of GTF was also held along with 9th and 10th Executive Committee meeting. At present, Nepal is a chair of GTF.

The major recommendations of the symposium are:

- Countries who have not updated and prioritized their costed tiger action plan are urged to do so by the end of 2008,
- More attention to be given on protection and development of the habitat, and improve tiger prey base,
- In all tiger conservation work there must be a balance between sustainable development and conservation, protection and due consideration of human livelihood issues,
- There must be good consideration of habitat fragmentation, and management of habitat outside protected areas,
- Mitigation plans are necessary to address the root causes of human/tiger conflict.

1.4.5.2 Nepal India transboundary meetings

The past three national transboundary meetings⁴ between the senior officials of the Governments of India and Nepal from the past seven years were aimed to provide a forum for an extensive interaction on areas of common interest and possible cooperation between PA managers, conservationists and officials of the two countries. The meetings were outstanding covering all aspects of trans-frontiers conservation, it had vision to effect CITES legislation, conserve, protect, regulate trade, share information and development networks to control illicit wildlife trade in international boundaries. The benefit of such would be to conserve and protect wildlife beyond national territories and complement protected areas for enhancing movement of wildlife.

As a follow up to the national level transboundary meetings, the park authorities from Nepal and India exchanged their reciprocal visits to the transborder protected areas of the two countries in the local level now also involving local stakeholders.

1.4.5.3 Tripartite Meeting

The very nature of the illegal trade demands for closer transboundary cooperation between the countries for the control of illegal trade in tiger parts. Delegates from Nepal, India and China met in Beijing on June 22, 2006 to discuss ways to work together to control the growing cross-boundary trade on wildlife species and products including Chubas.

1.5 Strengths and Capacities

The tiger has become an icon of biodiversity conservation in Nepal. In the recent years, with the changed political environment, it is most likely that tiger conservation will continue to be a national priority.

Manpower to manage, Buffer zones with revolving funds and institutions, Buffer zone community forests and livelihood support programs, research information and conservation partners, CBAPOs, informers and village rangers are strengths to implement the plan that gains public participation in buffer zones.

⁴ The First Transboundary meeting took place in Kathmandu, 3-5 January 1997, the second in Suraj Kund, near New Delhi, India from 28 February- 1st March, 1999, and the Third in Budanilkantha, Kathmandu from 13-15 September 2002.

2.1 Nepal's Tiger Conservation Action Plan Outline

Considering the ecological phenomena, it has been felt important to shift management from protected areas to ecosystem or landscape management (Grumbine 1994), so that entire tiger populations are treated as a single management unit (Dinerstein, et al. 1996). This large-scale perspective will identify the areas where habitat restoration will achieve the greatest positive effect. Prior to the landscape approach, conservation efforts used to focus on establishing and managing protected area systems. Unfortunately, in Nepal and across most of the tiger's range,

PAs, by themselves, are not large enough to support viable tiger populations. Additionally, forested and wild areas, outside the PAs, are often not administered and managed for wildlife conservation.

This plan has been updated with the lessons learnt from the implementation of Tiger Conservation Action Plan 1999, NBS 2002, NBSIP 2006 and the International Tiger Symposium which was held in Kathmandu between 16-18 April, 2007.

2.2 Goal

The goal of this Tiger Conservation Action Plan is to preserve, recognize, restore, and increase the effective land base that supports the Royal Bengal tigers (*Panthera tigris tigris*) in Nepal, in order to maintain a viable tiger population. The Government of Nepal (GoN) will expand conservation efforts, beyond existing protected areas, and recognize the entire Terai and Siwalik forest areas as tiger habitat. A broad-scale, land use approach to conservation is critical, not only for tigers, but also for the restoration and maintenance of intact ecosystems, upon which biodiversity depends, and which determine the quality of human life.

The ecosystem management, with an emphasis on building partnerships with local people, is crucial for maintaining tiger habitats outside protected areas because:

1. the existing protected areas, by themselves, are not large enough to maintain viable tiger populations
2. there are extensive forest lands outside protected areas where tigers currently occur
3. forests outside protected areas are often degraded and need ecological restoration
4. the key to restoring habitat outside protected areas is the inclusion of local people as stakeholders, who directly benefit through conservation actions, and contribute to management decisions.

On the basis of Nepal's tiger conservation

efforts and achievements, and the challenges, strengths and opportunities as discussed in the foregoing chapters, the following five specific objectives have formulated to the meet the overall goal of the action plan:

1. **Tiger and Prey Information:**

Establish sound scientific information base for management of tigers and prey base.

2. **Habitat management:** Manage tiger habitats at the landscape level.

3. **Conflicts Resolution:** Minimize tiger human conflicts.

4. **Anti-poaching and Anti-trafficking operations:** Protect the tigers and their prey base from poaching, retaliatory killing and illegal trade.

5. **Transboundary cooperation:**

Enhance transboundary cooperation for combating illegal trade in wildlife, maintaining ecological integrity in the tiger landscapes, and promoting tiger tourism.

For each of the objectives, key issues, strategies and activities have been identified on the basis of the information gathered from various sources such as review of the 1999 Tiger Action Plan and literature survey of the recently published materials on tiger conservation, field and central level consultation meetings,

international tiger expert meeting, coordination meetings of the tiger conservation action plan revision task force. Over 70 individuals participated in the three consultation meetings, one central level in Kathmandu (May 21, 2006), two field levels in Chitwan-Parsa (May 31-June 2, 2006), and Bardia Shuklaphanta (June 13, 2006). Information was also gathered from the recent field observations made by the task force members on various occasions. The task force is chaired by DNPWC senior official, and is composed of the representatives of MFSC, WWF, NTNC and a facilitator.

2.2.1 Objective 1. Tiger and Prey Information

To establish a sound scientific information base for management of tigers and prey species

Issues

Tiger Population

- In critical tiger habitats (CTH) within TAL, harboring reproducing tiger populations, particularly in protected areas, their population dynamics including demographic patterns are not fully understood;
- Inadequate studies of tiger behavior and of adverse human impacts on them in critical habitats;
- Inadequate monitoring of tiger based on standardized monitoring protocol;
- Inadequate human resources, technical skills and physical capacity to gather and process the necessary information on

tigers.

Prey base

- Inadequate information on prey population dynamics, human impacts of these (in particular impacts of livestock, and hunting) in CTH;
- Poor understanding of human and livestock implication of diseases on prey population at high densities areas;
- Negative impact of any flood-control measures on critical habitats are not fully understood;
- Increase use of chemical poisons, home-made explosives etc to kill ungulates in agricultural landscapes outside core areas.
- Inadequate human resources and physical capacity to gather and process necessary information on prey base.

Strategies

- Enhance knowledge and information base on tigers and its prey base on the basis of scientific works using tested methods on regular intervals using landscape level approach linking academic/conservation institutions
- Strengthen necessary human and physical capital in the PAs management system / government and civil society institutions for enhancing continues works on tigers

Activities

1. Compile all available scientific information on tigers and prey species in Nepal and make it available widely to government

and civil society institutions. However, the focus of information collection should be on ecological, methodological and human impacted topics that have management relevance.

2. In critical tiger habitats, develop rigorous protocols and methods for measuring demographic parameters (abundance, survival, dispersal, source-sink dynamics etc) in tigers, and, abundance and demographic structure for ungulates, on an annual basis.
3. For TCL as a whole, once every 3 year, conduct sign surveys to estimate habitat occupancy patterns and changes in these, for both tiger and prey species.
4. At CTH on an annual basis, a variety of surveys should be designed and implemented to tap sources of information such as government law enforcement records, village informant surveys and direct surveys of human impacts (snare, fires etc.). At the landscape level, during the 3-year surveys, questionnaire surveys of human impacts should be carried out.
5. Given the huge capacity needs for the monitoring activities outlined above, it is essential to create sufficient technical/human resources for carrying out joint monitoring involving government staff, conservation NGOs, Universities, buffer zone user groups, and other civil society institutions. These capacity building needs are to be prioritized particularly for the central and PA management levels of the management system.
6. Some of the detailed information needs that require high levels of scientific skills,

should be conducted by reputed Universities and research institutions in Nepal and from outside, with active encouragement of the government.

7. Develop a feedback mechanism to incorporate all the above information to both create and update PAs/forest management plans for critical tiger habitats and the TCL as whole.
8. Improve the existing physical infrastructure and equipments in PAs for tiger and prey base monitoring

2.2.2 Objective 2. Habitat Management

To maximize high quality, well connected tiger habitat using best management practices across the entire terai arc landscape.

Issues

Shrinkage

- Incomplete tiger habitat shrinkage data considering global figures of habitat shrinkage to 7% of the historical area and 40% decline in the last decade;
- Once luxuriant subtropical lowland forests (Char Koshe Jhadi) in the Bhabar region have been mostly restricted to the PAs, restricting most current tiger habitats;
- The potential habitats outside the PAs are under immense pressure from human activities including expanding infrastructures development.

Fragmentation

- Forest corridors between PAs are under pressure from human activities making

dispersal of tigers difficult ;

- The expanding physical infrastructures (canal systems, high-tension electrical lines, highways, settlements etc) including traditional rights of ways are the major barriers against the dispersal, gene flow among tiger populations and fragmenting intact habitat.

Disturbances

Collection of forest resource (NTFP, grasses, fuel wood), livestock grazing, forest fire, religious visits, tourism, highways and infrastructure related disturbance (including headwater repair and maintenance) and natural disaster (flood, erosion etc) causes disturbances in CTH.

Degradation

- **Wetland Management:** Continued pollution intake in Rapti and Narayani River including siltation & encroachment in natural wetland in Pas (like Rani Tal in SWR). Equally serious phenomenon is the encroachment of wetlands and waterholes by the invading species like Water hyacinth, *Cyperus* sp., *Trapa* sp., etc.
- **Grassland Management:** Decrease in grassland habitat by Natural Succession in PAs. This in turn has effect on prey base population. Management of Invasive species is becoming threat in the present times as *Mikania micrantha* is a major problem in Chitwan, whereas *Lantana camara* is a serious problem in western Nepal.
- **Human Related Wastes:** Some of

key habitat for tigers has been become dumping grounds for human related wastes particularly non biodegradable wastes.

Management

- In most of the cases, PA boundary is open and unfenced. Thus, intentional or unintentional intrusions are frequent.
- The management of the PAs and the forest outside are inadequately equipped with resources and equipment. The staff mobility is restricted due to severe shortage of resources as well as equipment.
- Entry of local people for annual grass cutting events in PAs is not well regulated or done in a way that benefits tigers.
- Shooting range practice by Nepal Army inside PAs causes disturbances and unintentional fires.

Strategies

- Develop landscape approach of habitat management to restore the remaining historical tiger habitats from being further loss, and to maintain the critical corridor connecting the major chunks of habitats to stop further fragmentation and increase amount of suitable habitat for tigers and prey base;
- Work with local community stakeholders (CBOs, NGOs, CFUG and other forest management modes) to ensure their activities in tiger habitats are sustainable and not causing disturbance or habitat degradation and explore economic incentives to benefit local communities

- for conserving tigers;
- Proposed Infrastructure Developments must include thorough Environmental Impact Assessment that takes into consideration that impact on tigers and mitigates the impact to the tiger Habitat.

Activities

2.1 Develop landscape approach

- Restore vegetation and water hole in the geographical connections and forest corridors between the PA's of TAL for safe dispersal of tigers.
- Manage the grassland habitats and waterholes to maintain a healthy population of tiger prey species.
- Monitor habitat quality, both potential and priority, using the DNPWC-MIS formats for ground verification, data validation and management implications such as to maintain grasslands.
- Update digital database maps using latest topo sheets, satellite imageries and aerial photographs for updating tiger information.
- Prepare land use plans for critical habitats of tigers outside PA's and manage them on the basis of land use plans.

2.2 Develop alternative resource

- Manage grasslands in the PAs by involving buffer zone residents with incentives of grass and firewood collection generated during habitat management.
- Construct/maintain cattle pool (a fenced enclosure for the illegally entering cattle) to control livestock grazing in the tiger habitats.

- Construct/maintain fire lines for fire control.
- Construct/maintain watchtower for habitat inspection
- Plant indigenous tree species in the open areas or implement the enrichment plantation of degraded forest areas.
- Develop program and activities to the local residents in lieu of grazing of livestock, such as improved cattle breeds, stall-feeding, biogas plants, and forming dairy cooperatives.

2.3 Strengthen coordinated efforts

- Conduct coordination meetings of the PA managers and forest officials.
- Prepare operational guidelines for the user groups and committees of the buffer zone and community forests on the habitat management activities in the potential tiger habitats, such as grazing control, sewage control and garbage management.
- Review/integrate tiger conservation in CFOPs and district forest management plans.
- Prepare operational plans for the restored areas by involving local communities.
- Establish and operate veterinary services for the livestock in the buffer zones.
- Arrange study tours for the representatives of the CBOS to the sites of successful forest management leading towards tiger habitats.
- Discontinue hunting license in tiger occurring districts in favor of tiger conservation.

2.2.3 Objective 3. Conflicts Resolution

Minimize tiger human conflicts

Issues

Resource demand

- Local people rely on the natural resources (fire wood, fodder, grass, etc) available in the PAs due to increasing demands and the nearby forests in spite of potential threats from the wildlife including tiger. Main reasons for this pressure on the tiger habitats are the supply of natural resources.
- Local people chose the readily available resources in the surrounding forests since the alternative resources such as biogas are not easily available for them.
- Grazing is restricted in the buffer zone habitat to conserve BZ Community Forests and subsequent increased pressure on park.
- Sharing of natural resources in the existing community forests is found to be not judicial. Hence the deprived people have to rely on the other forests for their needs.
- Resource demands: gravel (construction materials), fishing, NTFP both outside and inside the PAs (although illegal) is increasing the conflicts.

Co-existence

- Humans and tigers share the same area for several reasons and this can be termed as co-existence; for example, tigers and humans often use common paths and trails during their movements.
- For various reasons including supply of basic needs, rituals etc, human beings

use tiger habitats such as grasslands, forests, and water holes.

- Human beings regard tigers a source of inspiration, strength, encouragement and attraction. Tigers are the major icons of the festivals and religious activities of the Nepalese traditions. However, these traditional festivals and modern conservation programs are not interrelated for the overall benefit of tiger conservation. The recreational values of this magnificent animal have not been cashed for its overall conservation in the wild; and
- Poor Facilities for the management of Orphan Tigers.

Compensation

- Arrangement of compensation for the tiger related damage is not legally defined, as also discussed in the warden seminar 2006. However, the government provides compensations to the sufferers on the basis of human judgments based on degree of damage made by the tigers. Government contribution in the form of annual budget needs to be explored;
- Even if compensation is made available, it used to be very late. Thus involvement of council/user committees/groups has to be established;
- A wildlife damage compensation fund has been created in the buffer zone, but not a separate one especially to address the cases pertinent to tiger related damage. Similar funds need to be established for the conflict outside the PAs;
- Actual reporting and field verification mechanism needs to be established;
- Experience from the other tiger range countries needs to learnt and incorporated in future.

Incidents

- Human casualties and killings are the most unfortunate side of the human-tiger conflicts and sometime more intensified. The loss of livestock to tiger is equally important and the number of such incidents has been increased in the recent years;
- The indirect, yet very sensitive issue is loss of agricultural crops by ungulates ;
- Retaliatory killing of tigers is related to aforementioned conflicts; and
- Poor documentation of conflict incidents

Awareness

- A frequently asked question, 'What is the benefit of saving the tigers' has not been satisfactorily answered at the community level. Even the users who are participating in the tiger conservation programs are not fully aware of the benefits of tiger conservation.
- Incidents related to common leopard has been frequently mixed with tiger, thus, creating a mass misunderstanding.
- Weak awareness program is also causing conflicts.

Strategies

- Develop alternatives for natural resource base for the local communities so that the local people do not have to rely on the potential tiger habitats for the supply of natural resources.
- Develop safety measures while exercising traditional rights including rights of ways, resource collection, festivals etc.
- Develop a transparent community based mechanism of appropriate and timely compensation for the tiger related damage.

- Develop a community awareness program to address the issues pertinent to tiger-human conflicts.
- Database management and research to understand the causal factors and for planning (incidents).

Activities

3.1 Develop alternatives for natural resource base

- Identify and hand over community forests in the buffer zones as well as CFs outside PAs.
- Restore the degraded forests in the buffer zone/national forests and CFs outside PAs by artificial or natural regeneration.
- Prepare operational plans for the buffer zone community forests/CFs for sustainable harvest of natural resources.
- Develop community plantations, by mobilizing local resources and labor, so that local people need not collect their fodder and firewood from tiger habitats.
- Alternative energy sources such as biogas installations.
- Reduce livestock number by encouraging High Yielding Varieties.

3.2 Develop safety measures

- Erect signs of warning to the passersby in the major rights of ways, resource collection sites and shrines.
- Conduct awareness meetings at the local level during tiger marauding seasons.
- Monitor tigers around the human activity areas with local community engagement and database management.
- Take a 'man-eater' tiger under control immediately (for which a clear policy

will also be developed and circulated).

- Help desk will be established in all tiger range PAs.
- Establish field rescue team with necessary equipment.
- Conduct awareness meetings.
- Erect sign and posts for awareness.

3.3 Develop a community based mechanism of compensation

- Review conservation policies to incorporate compensation schemes.
- Establish community funds for the families of tiger victims.
- Establish the Help Desk and appoint responsible staff.
- Establish Field Rescue Team equipped with vehicles, communication sets and treatment gear.
- Establishment of relief fund.
- Explore for the community based human and livestock insurance against wildlife accidents.
- Establish field verification mechanism system.

3.4 Develop a community awareness program

- Conduct seminars and interactive programs, to emphasize on the co-dependency of humans and the Terai ecosystems; i.e., the health of such ecosystems is important, not only for biodiversity, but also for sustaining the ecosystem processes, upon which local people and development depend.
- Develop a curriculum for school children,

which portrays tigers as part of the ecosystem, rather than as an object for human exploitation.

- Develop audiovisual programs, for local people, which focus on tiger biology; they should be entertaining, as well as educational.
- Develop information centers, where problems faced by tigers are publicized; information should be in the form of photos or display cards in local languages.
- Make tiger documentary films and exhibits in awareness program.
- Publicize the fact that a strong economic link, between tourism and biodiversity, benefits both local people and conservation efforts.
- Prepare guidelines and awareness materials on the sales, distribution and application of toxics such as pesticides, insecticides, poisons etc.
- Conduct interaction meetings with the government line agencies (e.g. agriculture, livestock, and drug administration), nongovernmental and private sectors at the grassroots level on the control of sales, distribution and application of toxic materials such as pesticides, insecticides, poisons etc.

3.5 Database management and research

- Establish Database on tiger-human related conflict in all tiger occurring PAs;
- Conduct research on man eater tiger and their behaviors; and
- Develop strategy on managing orphan tigers.

2.2.4 Objective 4. Anti-poaching and Anti-trafficking Operations

Protect the tigers and their prey base from poaching, retaliatory killing and illegal trade.

Issues

Illegal trade

- Although the number of poaching incidents was found to be comparatively low in the PAs, the volume of tiger parts seizure was comparatively high.
- In 2004-05, the number of tiger killed by poachers was four, whereas over 19 pieces of tiger skins were seized mostly in Kathmandu and Chitwan, and as far as Rasuwa near the Nepal China border.
- Since all parts of tiger are consumed in various possible forms of medicines, poachers may collect almost everything of their 'kill' leaving virtually no evidences for the PA guards.
- Growing affluent populations in Asia and elsewhere have created high demand on the tiger body parts in various traditional medicines. Increased accessibility with modern transportations has helped illegal trade in tiger body parts.
- Apart from the traditional Chinese medicine for which much criticism has been made in various forums. The other side of social demands for tiger skins is related to the conservative mind, luxury, power and imitation.
- Nepalese territory has been increasingly used to transport the wildlife body parts

to the consumers in Tibet/China, East Asia and even to the west

Law enforcement

- Poaching poses a significant threat to tigers and their prey. No amount of habitat restoration will result in successful tiger conservation, if high poaching levels continue. Efforts to prevent poaching must be made on a landscape scale, to protect tigers, both inside and outside protected areas.
- Army patrolling is limited to protected areas and is very expensive.
- Control over tiger poaching has not been effective due to armed conflicts in the field.
- Direct compensation to the affected people has not been materialized, due to various practical reasons such as reporting, valuation and authentication.
- Due to inadequate security, people are unwilling to cooperate with the management by identifying the poachers, helping the management arrest the poachers, providing the management with information.
- The NPWC Act is flexible, since the range of fines and punishment vary from the minimum of Rs 50,000 to the maximum of Rs100,000, and similarly imprisonment ranges from the minimum of 5 years to the maximum of 15 years. (The price for tiger bones is estimated between Rs 10,000 and Rs 30,000 per kilogram, and in average poachers gather 10 kg

of bones from a single tiger.)

- Political commitment of the government plays a vital role in combating poaching and illegal trade. The arrested poachers and smugglers were found using their network penetrating in the political circles to exert on the decision makers on their favor.
- There are informal reports that powerful personalities were found involved in the offense and protection of the poachers

Incentives

- Attractive awards have been announced from time to time for the informers who bring valuable information pertinent to tiger conservation. But there are community complaints that these awards had great discrepancies in words and deeds.
- Communities who are directly involved in tiger conservation are not directly benefited from the tiger conservation programs.
- There are community resentments towards tigers and wildlife conservation. Efforts to minimize such resentments are inadequate as well as misrepresented. The needy and genuine communities have been treated in general.

Coordination

- Several government agencies are responsible for tiger conservation within their boundaries, such as the District Forest Offices and National Park/Wildlife Reserve Offices. Coordinated efforts have been felt essential for the successful

operations of antipoaching.

- Considering the network of the poachers and smugglers, it has been experienced that involvement of the police organization would be indispensable. However, the police organization has been involved more in social problems rather than in wildlife conservation.
- Illegal trade in wildlife products has been possible due to various reasons such as porous boundary between Nepal and its neighbors, less informed custom officials on the wildlife products.
- Coordination among the varied organizations is a major challenge for the DNPWC whose expertise is mainly to manage the protected areas and protect wildlife.
- Coordination at district level will be done by the chairperson of the District Forest Coordination Committee and inter district coordination will be done by the regional forest director of the concerned region.
- Information sharing among the national and international organizations has been found to be inadequate on the issues of tiger related cases. Only few research works have been initiated in the fields of tiger poaching and illegal trade.
- The Nepal Army serves as a major protection unit in the protected area. They are stationed in a particular protected area for about two years. The men are unaware of conservation responsibilities. Conservation organizations (namely DNPWC, NTNC, WWF etc) conduct orientation programs for them. But, by the time they are knowledgeable and used to the terrain, they are transferred

to another protected area.

Capacity

- The strength of the civil servants in the four protected areas (Parsa, Chitwan, Bardia and Shuklaphanta) is 325 compared to 1,748 men of the Nepal Army stationed in these areas totaling over 4,700 km² land base. Legally both the army men and civil servants operate their activities within the protected area boundary.
- The antipoaching units of the civil guards are equipped with the subsistence facilities such as field gear. Field equipment such as binoculars, communication sets have been either lost to the insurgents during conflict days. Their mobility depends on their foot, and sometime supported by elephants and vehicles.
- The antipoaching operations are under funded with the regular budget. The DNPWC has to rely on the external sources for the urgent and unprecedented activities. Ideas of establishing endowment fund for antipoaching operations have been limited to the conceptual level only. The conservation fee collected at the PAs has been left unused.
- Nearly 500,000 populations are organized under the buffer zone management system in the tiger conservation landscapes. They are organized in various community based organizations such as User Groups and User Communities. Over 3,660 User Groups have been formed under the aegis of the Participatory Conservation

Program. However, their only strength is their voice and work force. Against the fully equipped poachers, their unarmed force becomes helpless.

- The local youths have also taken initiatives by forming antipoaching groups in the Nawalparasi and Chitwan districts. However, their activities are limited mostly to public awareness and intelligence networks.
- Villagers can easily identify suspicious activities like poaching; past experience shows that local undercover informants are very effective in helping to identify and apprehend poachers.
- Poverty and unemployment have also been linked with poaching and illegal trade in wildlife parts. Local individuals are found to be lured with a handsome money for 'little' crime. The poor youths take high risks of conducting crime when their family members are taken care of by the concerned parties.
- The buffer zone policy of recycling park revenue has been linked with community development. However, the policy does not lay any terms and conditions for antipoaching operations.

Awareness

- The confiscated items are mostly stored under the government custody. At times with special decisions, some degraded items have been destroyed by fire. On the want of clear policy on such confiscated items, the concerned government is under constant threats of loss or theft.

- Samples of tiger parts could be displayed in the museums and visitors centers for educational purposes, and to be used for scientific research purposes.

Strategies

- Strengthen institutional network and coordination for CITES enforcement to control illegal trade in wildlife and its derivatives with special reference to tiger body parts.
- Strengthen antipoaching efforts in and around the protected areas by also mobilizing the civil societies for the effective implementation of law enforcement to save tigers in the wild.
- Enhance public awareness programs by considering cultural sentiments and values related to poaching of tiger and trade in tiger parts.

Activities

4.1 Strengthen institutional network

- Enact CITES bills
- Strengthen CITES units in management and scientific authorities
- Conduct CITES implementation training for the management and scientific authorities, government officers at the custom, police, and other relevant agencies. The topics will include identification of wildlife and their derivatives especially tiger body parts, forensic procedures, national and international laws on the control of illegal trade and poaching.
- Conduct transboundary meetings with the neighboring countries focusing on the cooperation for the control of illegal trade in wildlife and their derivatives.
- Prepare updated reports for the national, regional and international meetings pertinent to CITES, GTF, IUCN, TRAFFIC, WCPA, WTO and others as appropriate.
- Participate in the national, regional and international meetings, conferences and seminars that are pertinent to the control of illegal trade and poaching.
- Maintain records of incidents related to poaching, illegal trade, confiscation etc on tiger and other wildlife species
- Identify key customs for CITES enforcement
- Prepare a status report on the rights and duties of stakeholders who are directly or indirectly responsible for the protection of tigers in the wild.
- Conduct coordination meetings to review on the status of tiger, issues of poaching and smuggling tiger and its body parts.
- Conduct feasibility survey for the need to have cooperative agreements between enforcement agencies and transport companies (air, rail, bus, freight, express courier)
- Organize awareness interactions with the transport media on the illegal trade issue.
- Review the current strengths of the antipoaching capacity of the PAs such as human resources (number of scouts, guard posts and the protection unit); physical facilities (field gear, vehicles, elephants, communication systems, reporting systems); intelligence network (reporting, database on poachers and

smugglers, coordination with the authorities of forest, police, custom, postal service etc.); and financial aspects (government budget, incentives, rewards, emergency fund, conservation fee) and others

- Conduct regular training programs for the antipoaching units
- Equip the antipoaching units with the field gear and basic equipment (binoculars, communication sets, GPS, kitchen sets etc)
- Procure physical resources to enhance antipoaching activities, such as four wheel drive vehicle, raft, motorboat, elephant, motorcycle, bicycles etc.
- Train DNPWC professional staff to take responsibility as a tiger authority
- Conduct series of thematic training workshops for the key individuals and/or civil servants-such as district administrators, customs officials, postal workers, security personnel, etc. regarding threats to tigers, illegal trade, and the identification of tiger parts.
- Study on the feasibility of mobilizing buffer zone community based organizations including youth groups in antipopaching operations
- Prepare case studies on the arrested poachers and smugglers to find out the socio-economic and psychological factors and alternatives to the wildlife crimes (such as poverty, unemployment, temptation, compellation etc.)

- Harmonize (review, gap analysis, consistency, complement) anti-poaching efforts together with Rhino Conservation Action Plan
- Prepare antipoaching operation plans at the tiger conservation landscape level
- Review the existing management plans for the protected areas including buffer zones from the perspective of tiger conservation
- Conduct orientation training and Anti-Poaching Training for Army (or in joint with A/P units) programs for the protection unit deployed in the protected areas.
- Review the post-conflict scenario for tiger conservation
- Prepare/update guidelines on reporting, valuation and authentication of the tiger related incidents for direct compensation to the affected people
- Establish a network of candid informers that will eventually lead to arrest poachers and smugglers who handle tiger body parts.
- Review and Amend the NPWC Act
- Increase the prevailing minimum ceiling of the punishment against wildlife crimes as per the discretionary power of quasi-judicial under NPWC Act
- Organize interaction meetings with the civil societies to discuss on enhancing political commitment in combating poaching and illegal trade.
- Conduct advocacy and lobbying activities during strategic events (wildlife week, environment day, biodiversity day, regular campaigns) at a high political level as a

4.2 Strengthen antipoaching efforts

means of awareness to garner political will to address tiger conservation, poaching and illegal trade.

- Conduct feasibility survey of establishing a sustainable mechanism of providing appropriate incentives for the informers
- Organize interaction meetings at the community levels to finalize on the mechanism of incentives
- Establish an endowment fund for incentives
 - Re-establish Anti-poaching Units
 - Restore Security Guard Posts
 - Buffer Zone Community Training to support A/P units
 - Establish Dialogue with Minister of Forests and Soil Conservation and/or Police Headquarter to develop Kathmandu based Investigation Cell
 - CITES/Wildlife Crime Training for Police, Customs, DNPWC, MFSC etc
 - Post-Poaching/Investigation Training for Selected Police, Customs, DNPWC, MFSC, etc
 - Human Rights Training

4.3 Enhance public awareness programs

- Conduct nature conservation workshops and seminars, to provide basic

knowledge; increase awareness-for game scouts, forest guards, rangers, and officers of their role in tiger and biodiversity conservation.

- Bring out public notice on the importance of tigers, and legal fines against the tiger related offenses in the buffer zones and potential areas of illegal trades
- Incorporate tiger conservation information and fines against tiger related offenses in the school level textbooks in the buffer zones
- Install kiosks on the importance of tigers, and legal fines against the tiger related offenses at the major tourist arrival-departure locations such as airports, visitors information centers, immigration offices, protected areas entry fee collection centers etc.
- Design, produce and distribute educational materials (posters, booklets, websites) based on the scientific background of tigers (ecological importance, balance in nature etc), cultural values (Bagh Bhairav, Namu Buddha, Dasain festival etc), and messages of social leaders and celebrities
- Prepare national communications plan for promoting tiger conservation with support of private sector communications experts.

2.2.5 Objective 5. Transboundary Cooperation

Enhance transboundary cooperation for combating illegal trade in wildlife, maintaining ecological integrity in the tiger landscapes, and promoting tiger tourism.

Issues

Administration

- The protected areas authorities in the two sovereign countries have different working styles and power of attorney. They are unable to officially meet and exchange information without formal approval of the central/federal government bodies.
- At places there are border disputes creating additional obstacles for wildlife conservation matters.
- Wildlife issues (illegal trade, transient, migration etc) are rarely priority agenda in the border coordination meetings.
- The present governmental structure does not allow DNPWC authorities, or other governmental agencies, to accept foreign funds, without first passing through bureaucratic hurdles.
- There is unanimity on the issues of wildlife conservation including tiger right from the central to the local levels. However, the transboundary initiatives are beyond the scope and limitations of the field level authorities.

Ecology and international boundary

- Tiger habitats are not connected between India and Nepal properly, either through protected areas or national forest lands; thus, tiger management units may extend

across international borders.

- Wildlife species including tigers have not free and unobstructed movements along these corridors linking the two countries.
- In order to maintain viable tiger populations, cooperation between neighboring countries is necessary.
- Tiger conservation is ultimately a global issue, one that requires support from both local and international agencies and research institutions.
- Tigers have been the symbol of marketing for the tourism entrepreneurs operating business in the tiger landscapes. Even before the creation of national parks, tiger tourism has been a flourishing business in Chitwan. However, there are observations that tourism did not actually contribute significantly towards protected area management or enforcement.
- Tiger sightings in Nepal's tiger landscapes are very promising, yet potential are under utilized.

Strategies

- Strengthen transboundary cooperation at the central and field levels to complement the efforts of controlling poaching of wildlife and smuggling of wildlife body parts.
- Maintain ecological integrity of the wildlife habitats focusing on the tigers and the other flagship species that used to cross international borders.
- Promote tiger tourism that will benefit the local communities and eventually be a conservation strategy for tigers and their prey base.

Activities

5.1 Strengthen transboundary cooperation

- Prepare guidelines for holding transboundary meetings at the field levels. This will include identification of issues, alternatives solutions, commitments on the part of Nepal.
- Exchange annual reports, newsletters and other relevant documents between the field level authorities.

5.2 Maintain ecological integrity

- Develop regional strategies for monitoring illegal wildlife trade along the borders with India and China.
- Organize regional media tours on tiger conservation.
- Prepare protocol for joint research activities on the transient wildlife species that frequently cross the international borders.
- Organize interaction meetings with the South Asian Association for Regional Cooperation (SAARC) secretariat to explore the possibility of using SAARC as a forum for wildlife conservation, antipoaching and control of illegal trade in wildlife.
- Include Tiger and other conservation agendas in the district level Joint Indo-Nepal Friendship meetings.
- Establish and ensure habitat connectivity for tigers in the following six zones in India-Nepal TAL Valmiki-Chitwan zone, Suhelwa and Katernia Ghat Wildlife Sanctuary – Bardia NP, Dudhwa (Belrayan Range) – Basanta Forest, Kishanpur WLS, Sharada River, Lagga Bagga – Shuklaphanta, Shuklaphanta East, Churiya Hills (Talla Pani) – Maha Kali

(Sharada) and Champawat Forest Division.

- Co-ordination between India and Nepal to improve the habitat condition for tiger and prey species.
 - a. Persuade Indian Government to activate community forestry program in and around Valmiki TR to reduce pressures on Chitwan NP and vice versa.
 - b. Gather more information on forest and wildlife north of Suhelwa in Nepal.
 - c. Bardia – Katernia Ghat zone – Pressure from Nepal side, east of Geruwa River on Nishangada range of Katernia Ghat, Survival of Katernia Ghat WL Sanctuary.
 - d. Basanta – Dudhwa (Belrayan) – Creation of the corridor.
 - e. Kishanpur, Sharada, Laggabagga – Work with Indian Government to control poaching and dependency on the forest.
 - f. Suklaphanta East – Sharada, wildlife use of the area . On Indian side Nandhour-Ladhiya Conservation Reserve and Nandhour Valley NP.

5.3 Promote tiger tourism

- Review tourism plans from the perspectives of tiger tourism.
- Assess impacts of existing tourism facilities in PAs.
- Train the local guides on tiger tracking and monitoring who will also be accompanying with the visitors as appropriate.
- Prepare a marketing strategy for tiger tourism in the tiger landscapes (e.g. Adopt a tiger scheme).

2.2.6 Logical Framework

Goal	Objectively Verifiable Indicator ⁵	Means of Verification	Assumptions
Preserve, recognize, restore, and increase the effective land base that supports the Royal Bengal tigers (<i>Panthera tigris tigris</i>) in Nepal, in order to maintain a viable tiger population	<ul style="list-style-type: none"> Tiger population in Nepal maintained at 350 - 375 individuals XX ha of critical tiger habitats outside protected areas maintained or restored 	<ul style="list-style-type: none"> Census Report Office Report GIS data Progress reports Field Research Report Office record 	<ul style="list-style-type: none"> No big scale calamities occur (flood, epidemics) Political stability and security situation remain normal
Purposes 1. Tiger and Prey Information: Establish sound scientific information base for management of tigers and their prey base.	<ul style="list-style-type: none"> All breeding tigers will be recorded through camera trap and other surveys Population trend of prey base maintained or increased in PAs and critical tiger habitats outside PAs 	<ul style="list-style-type: none"> Species monitoring data 	
2. Habitat management: Maximize high quality, well connected tiger habitat using best management practice across the entire terai arc landscape	<ul style="list-style-type: none"> Increase in suitable habitat for prey base under effective management (CF, BZ, Collaborative, LF, protected forest) 	<ul style="list-style-type: none"> Tourists feedbacks Meeting minutes 	
3. Conflicts Resolution: Minimize tiger human conflicts	<ul style="list-style-type: none"> 50% Decrease in retaliatory killing of Tigers with respect to baseline of 2006 50% decrease in events of tiger-human conflicts with respect to baseline of 2006 		
4. Anti-poaching and Anti-trafficking operations: Protect the tigers and their prey base from poaching, retaliatory killing and illegal trade.	<ul style="list-style-type: none"> Decrease in number of poaching and smuggling incidents as a result of illegal trade control measures Number of voluntary information leading towards arrest of poachers and smugglers increased 		
5. Transboundary cooperation: Enhance transboundary cooperation for combating illegal trade in wildlife, maintaining ecological integrity in the tiger landscapes, and promoting tiger tourism.	<ul style="list-style-type: none"> Joint regular transboundary efforts (meetings, information sharing) increased 		

⁵The time frame applies for five years during 2007-2011, unless specified.

1. Tiger and Prey Information

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
1.1 Enhance knowledge and information base <ul style="list-style-type: none"> • Compile the available information on tigers and prey species in Nepal • Develop a rigorous protocol for tiger and prey base monitoring • Conduct sign survey for habitat occupancy pattern and change in these for tigers and prey base once every three years • Conduct variety of survey on human disturbance impact ; village information survey on tigers and other information • Conduct high skill scientific survey by universities and research institutions • Capacity building of PAs staffs and conservation NGOs, universities, buffer zone user groups and other civil society institutions • Develop feedback mechanism for PAs/forest management for critical tiger habitat Improve • The existing physical infrastructure and equipment in PAs for Tiger and prey base 	<ul style="list-style-type: none"> • Central database on scientific information of tigers operational and updated • At least one scientific studies conducted annually • Increased number of regular monitoring and studies by trained human resource • At least one tiger expert trained and retained in each partner conservation organization • At least 10 sets of functional survey and monitoring equipments maintained in each protected areas 		

2. Habitat Management

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
2.1 Develop landscape approach <ul style="list-style-type: none"> • Upgrade the central GIS lab • Organize capacity building programs • Restore vegetation and water hole • Manage the grassland habitats and waterholes • Monitor habitat quality • Update digital base maps 	<ul style="list-style-type: none"> • 50%habitat in Barandabar, Khata and Basanta forest corridor restored • Regulations and guidelines required for forest corridor management formulated 		
2.2 Develop alternative resource <ul style="list-style-type: none"> • Manage grasslands • Construct/maintain cattle pool • Construct/maintain fire lines • Construct/maintain watchtower • Plant indigenous tree species • Provide grant facilities 	<ul style="list-style-type: none"> • Area of grasslands in the protected areas increased • Number of illicit grazing animals decreased 		
2.3 Strengthen coordinated efforts <ul style="list-style-type: none"> • Conduct coordination meetings • Prepare operational guidelines for community forests • Review/integrate tiger conservation • Prepare operational plans for local communities. • Establish and operate veterinary services • Arrange study tours for the community based organizations 	<ul style="list-style-type: none"> • Tiger related activities included in the forest management plans in TAL districts 		

3. Conflicts Resolution

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
3.1 Develop alternatives for natural resource base <ul style="list-style-type: none"> Identify/hand over community forests Restore the degraded forests Prepare operational plans for community forests Develop community plantations 	<ul style="list-style-type: none"> Area of community forests, restoration of degraded forests and plantation increased by xx hectare 		
3.2 Develop safety measures <ul style="list-style-type: none"> Conduct awareness meetings Erect signs of warning Monitor tigers around the human activity areas Take a 'man-eater' tiger under control 	<ul style="list-style-type: none"> Number of human and livestock incidents decreased by at least 50% 		
3.3 Develop a community based mechanism of compensation <ul style="list-style-type: none"> Review conservation policies Establish community funds Establishment of relief fund Establish the Help Desk Establish Field Rescue Team 	<ul style="list-style-type: none"> Compensation mechanism in place 		
3.4 Develop a community awareness program <ul style="list-style-type: none"> Conduct seminars and interactive programs Conduct interaction meetings Develop a curriculum for school Develop audiovisual programs Make tiger documentary films and exhibits Develop information centers Develop community plantations Publicize on tourism and biodiversity Prepare guidelines and awareness materials on toxics Encourage people to develop/manage sewage/irrigation canals 	<ul style="list-style-type: none"> Local participation in tiger conservation 		

4. Anti-poaching and Anti-trafficking operations

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
<p>4.1 Strengthen institutional network</p> <p>Trainings:</p> <ul style="list-style-type: none"> • Conduct CITES implementation training for the management and scientific authorities • Conduct regular training programs • Train the professional staff of DNPWC • Conduct training workshops for customs officials, postal workers, police, etc <p>Meetings:</p> <ul style="list-style-type: none"> • Participate in the meetings, conferences and seminars • Conduct transboundary meetings • Conduct coordination meetings <p>Study, Survey, Reports:</p> <ul style="list-style-type: none"> • Prepare updated reports • Maintain records of incidents • Study on mobilizing buffer zone community • Prepare case studies on poachers and smugglers • Prepare a status report • Conduct feasibility survey on cooperation of transport companies • Organize awareness interactions with the transport media • Review the current strengths of the anti-poaching capacity • Equip the anti-poaching units • Procure physical resources • Identify key customs 	<ul style="list-style-type: none"> • Functional network for illegal trade network in place 		

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
4.2 Strengthen anti-poaching efforts <ul style="list-style-type: none"> • Conduct orientation training programs for the protection unit • Organize interaction meetings with the civil societies • Organize interaction meetings • Prepare guidelines on reporting, valuation and authentication • Conduct feasibility survey • Review the existing management plans • Prepare antipoaching operation plans • Establish a network of candid informers • Review the existing NPWC Act • Conduct advocacy and lobbying activities • Review the post-conflict scenario • Establish an endowment fund for incentives 	<ul style="list-style-type: none"> • Public participation in anti-poaching efforts increased by at least 10% 		
4.3 Enhance public awareness programs <ul style="list-style-type: none"> • Conduct workshops and seminars • Incorporate tiger conservation in school textbooks • Design, produce and distribute educational materials • Install kiosks • Bring out public notice 	<ul style="list-style-type: none"> • Number of voluntary information leading towards arrest of poachers and smugglers increased 		

5. Transboundary Cooperation

Result / Output	Objectively Verifiable Indicators	Means of Verification	Assumptions
5.1 Strengthen transboundary cooperation <ul style="list-style-type: none"> • Prepare guidelines on transboundary meetings • Exchange annual reports, newsletters and other relevant documents 	<ul style="list-style-type: none"> • Frequency of meetings and number of participants increased 		
5.2 Maintain ecological integrity <ul style="list-style-type: none"> • Organize interaction meetings with SAARC • Organize regional media tours • Develop regional strategies for monitoring illegal wildlife trade • Prepare protocol for joint research activities 	<ul style="list-style-type: none"> • GTF support to Nepal increased 		
5.3 Promote tiger tourism <ul style="list-style-type: none"> • Train the local guides • Review tourism plans • Prepare a marketing strategy 	<ul style="list-style-type: none"> • Number of tiger visitors increased 		

2.3 Business Plan

2.3.1 Human resources

DNPWC is organized with its Headquarters in Kathmandu and field offices in the 14 protected areas. It is led by the Director General with the support of the Deputy Director General and the seven section chiefs. The sections of Administration, Account and Computer are headed by the Gazetted Class III officers under the direct supervision of the Director General, and the technical sections of Management, Monitoring and Evaluation, Planning, Ecology and Conservation Education are headed by the Gazetted Class II officers under the direct supervision of the Deputy Director General. Although all the sections

have their respective responsibilities towards tiger conservation in one way or another, the Ecology Section is considered to be primarily responsible for the task.

The human resources of the DNPWC are 1,050 personnel of whom 41 are engaged in the headquarters, and the rest 1,011 are deputed in the 14 field offices. The total number of the field staff in the tiger range protected areas is 543 including 14 officers, 312 nongazetted staff and 217 hattisares. Similarly, the Government of Nepal has deployed over 3,900 Nepal Army personnel in 11 protected areas, and their strength is over 1,700 men in the four tiger range protected areas (Table 4).

Table 4. Staff Positions in the Tiger Habitat Protected Areas

SN	Protected Area	Civil Administration				Nepal Army
		Gazetted	Non Gazetted	Hattisare	Total	
1	Parsa WR	2	41	32	43	239
2	Chitwan NP	6	135	63	141	792
3	Bardia NP	3	89	33	92	478
4	Shuklaphanta WR	2	47	24	49	239
5	Total	13	312	152	325	1,748

Source: DNPWC 2003, 2006

Under the umbrella of the buffer zone system, over 487,000 buffer zone residents are spread in three municipalities and 74 Village Development Committees (VDC) in ten District Development Committees (DDC). They are

organized into various user committees and user groups (Table5). These community based organizations will be mobilized where applicable as outlined under various activities of the tiger action plan.

Table 5. Buffer Zone Communities in the Tiger Habitat Protected Areas

SN	Protected Area	Year	Area sq km	Districts	VDCs	Population	Households	Biodiversity Trust (Rs)
1	Parsa WR	2005	298.17	3	11	43,228	7,228	4,030,820
2	Chitwan NP	1996	750.0	4	37	223,260	36,193	5,894,636
3	Bardia NP	1996	328.0	2	17	120,000	11,504	3,616,353
4	Shuklaphanta WR	2004	243.5	1	12	100,953	17,006	3,985,200
5	Total	-	1619.67	10	77	487,441	71,931	17,527,009

Source: DNPWC 2006

The Tiger Action Plan will be implemented under the framework of the current management plans of the protected areas. The existing human resources of the government authorities and the partner organizations such as NTNC, IUCN, WWF have been considered adequate to implement the programs as outlined in the action plan.

However, capacity enhancement of both the government authorities and the buffer zone communities will be promoted as explained under various activities.

2.3.2 Financial requirements

DNPWC had over Rs17 million budget for

the year 2004/2005, of which 28 percent (Rs4,890,000) was for development activities, and the remaining (Rs12,398,422) for general administrative cost. The average annual revenue generated at the headquarters for the period 2000-2005 was over Rs11 million.

The Chitwan NP generated average annual revenue of nearly Rs45 million compared to its annual budget of Rs15.6million. Among the four protected areas, Parsa WR generated only nearly Rs400,000 annual revenue which comes out to be only 10% of its annual budget (Table 6).

Table 6. Annual Budget, Expenditure and Annual Average Revenue (in Rupees)

Protected Areas	Annual Budget 2004/2005	Expenditure (2004/2005)	Average Annual Revenue (2000-2005)	Percent of Revenue/ Budget
DNPWC Headquarters	17,288,422	16,061,422	11,485,378	66
Chitwan NP	15,600,000	15,597,000	44,974,109	288
Bardia NP	8,975,000	8,718,000	5,149,444	57
Shuklaphanta WR	6,400,000	5,689,000	1,119,514	17
Parsa WR	3,845,000	3,661,000	395,557	10

Since the fiscal year 2001-2002, the revenue generation has been declining in the tiger protected areas (Table 7) as well as in the DNPWC headquarters.

Table 7. Revenue Generation in the Tiger Habitat Protected Areas (Rs)

SN	Protected Area	2000-01	2001-02	2002-03	2003-04	2004-05
1	Parsa WR	354,153	258,501	421,860	563,698	379,575
2	Chitwan NP	74,302,801	38,887,119	30,831,199	40,060,770	28,137,909
3	Bardia NP	9,821,784	4,376,586	2,777,655	3,710,147	182,186
4	Shuklaphanta WR	2,419,215	1,552,950	631,871	523,770	469,765
5	Total	87,197,953	45,075,156	34,662,585	44,858,385	29,169,435

2.3.3 Physical resources

Under the respective management plans, various activities that can be grouped into five major programs, namely conservation, habitat management, species management, religious area management and infrastructure development. The special activities include Buffer Zone Management, Participatory Conservation Program, Terai Arc Landscape, and Tourism for Rural Poverty alleviation Program. In general, overall protected areas management is geared towards conservation of endangered species like tiger. Summary of the programs with proposed budget that are identified in the specific protected areas management plans are given in the Annex 2.

especially research and antipoaching programs ever since it was established in 1982 under the legislative act. One of the prime roles of the Nepal Army deployed in the protected areas is to protect the wildlife including tigers. The other government agencies that are indirectly involved are district administration, police, custom etc.

In all the tiger range protected areas, Buffer zone has been declared, and consequently community based organizations have been organized (Table 5). Apart from the user groups organized under the Buffer zone system, the local youths have also formed various clubs and nongovernmental bodies to protect tiger and other wildlife in their neighborhood.

2.3.4 Partners identification

The Department of National Parks and Wildlife Conservation (DNPWC) is the major stakeholder for tiger conservation programs. The other major government agency that is involved in the field activities is the Department of Forests. Similarly, NTNC has been involved in various aspects of tiger conservation

Apart from the PA personnel and representatives, there are numerous potential stakeholders within the country. They include tourism entrepreneurs (hoteliers, lodge owners, nature guides), development organizations personnel (members, project staff), and teachers and students in the fields of forestry, biological science etc.

There are three major institutions namely the Institute of Forestry in Pokhara and Hetauda, the Institute of Agriculture and Animal Sciences in Rampur, and the Natural History Museum in Swayambhu, Kathmandu. These institutions can be strategic partners to jointly develop and conduct research programs. In fact, Natural History Museum is the scientific authority of CITES in the country.

Since the beginning of the modern conservation history of the country, DNPWC has been receiving generous supports from various conservation organizations worldwide. It has been realized that it is necessary to streamline the supports of partners and at the same time enhance strategic partnership for the symphonic actions and synergetic results in conservation.

The major organizations that are involved in conservation programs of the tiger range protected areas and their scopes are as follows:

- DFID (Department for International Development) /SNV (Netherlands Development Organization) /UNDP: revise management plan and prepare buffer zone management plan and tourism plan and support buffer zone program
- Frankfurt Zoological Society: Gharial breeding centre
- GEF (Global Environment Facility) /UNDP: biological corridor linking CNP, ICDPs in CNP buffer zone
- ITNC: antipoaching, tiger monitoring

- IUCN: CITES implementation, World Heritage Site monitoring, wetland policy, and capacity building
- NTNC: staff training, community development, research in CNP, BNP, SWR (Shuklaphanta Wildlife Reserve) and elsewhere
- London Zoological Society: community development in CNP
- Smithsonian Institute: wildlife research
- UNDP: community development and conservation in CNP
- UNESCO (United Nations Economic, Scientific and Cultural Organization) World Heritage Support is there for renovation of Kasara Darbar and developing it as a Conservation Education Centre
- WWF: wildlife conservation in TAL
- Save The tiger fund, Washington DC
- US Fish and Wildlife Department

The countries affiliated with the CITES, IUCN and other conservation conventions are also potential stakeholders for tiger conservation efforts in Nepal.

2.3.5 Coordination mechanism

Coordination for tiger conservation has been conceived at three levels: protected areas, Terai Arc Landscape, and center. The coordination mechanism designed in the protected area management plans will be the basis for coordinating programs and actions for tiger conservation. The protected areas

offices will also coordinate with their respective buffer zones.

The TAL strategy will be considered as the basis for coordination at the landscape level.

The Ecology Section of the DNPWC will be the key player for this level of coordination works.

At the central level, the MFSC/DNPWC will play a key role in coordinating the line

ministries for mobilizing sector services such as forests, police, custom etc. Coordination with the international organizations, research academies, media, donors and the protected areas will also the responsibility of the MFSC/DNPWC (Table 8). The Director General of the representative of DNPWC will be the facilitator to maintain central level coordination.

Table 8. Coordination Mechanism

Level of coordination	Protected Areas	Landscape Level	Center
Key Players	NP/WR Offices	Ecology Section of DNPWC	MFSC/DNPWC
Partners	Protection unit, BZ Institutions through BZMC, Range posts, Guard Posts, district line agencies, respective DDCs, district line agencies, projects and NGOs	CNP, BNP, SWR and PWR, Regional forest directorates – Central Western, Mid-Western and Far-Western Development Regions, TAL office, regional level projects	Departments of Forests, Police, Customs, International organizations, Research academies, Nepal Army, Media, Donors
Frequency	Weekly, monthly	Trimesterly	Six-Monthly
Main agenda	Daily and weekly updates, field monitoring, procurement, construction, maintenance, field budget and programs, mail runners, field staff issues	Trimester updates, regional programs, DDC programs and budget, regional priority, government circulars, public awareness, coordination	Six-monthly updates, national budget and program, staff issues, national priority, donors policy, media coverage, supervision, coordination, government circular

2.4 Budget

The total budget for the action plan for the period of five years is estimated to be US \$ 1,150,000 of which 39% will be spent for remuneration, and 16% for equipment and 12 % for human resources development, 14% for construction, 11% for travel and 8% for the office running cost (Chart 1). In terms of activities, 31% budget has been set aside for antipoaching and anti-trafficking operations,

33% in conflict resolutions, 18% habitat management, 12% tiger and prey information and 6% transboundary cooperation (Chart 2). In the first year the total amount will be US\$201,000, and US\$178,000 in the fifth year. The maximum amount US\$291,000 has been allocated in the second year (Chart 3). Detail breakdown by each activity is given in the Annex 3.

Chart 1 : Budget Distribution by Line Items

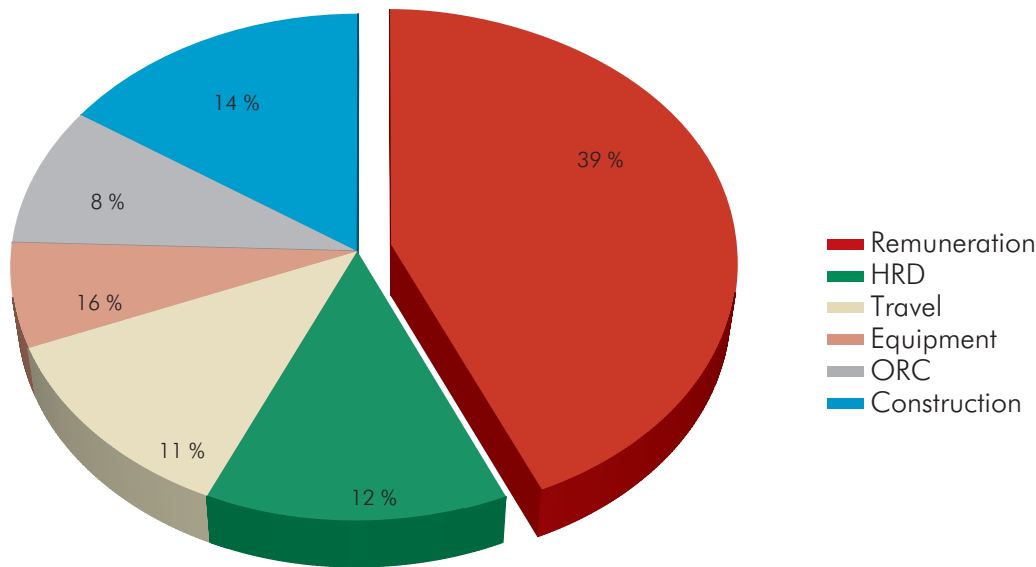
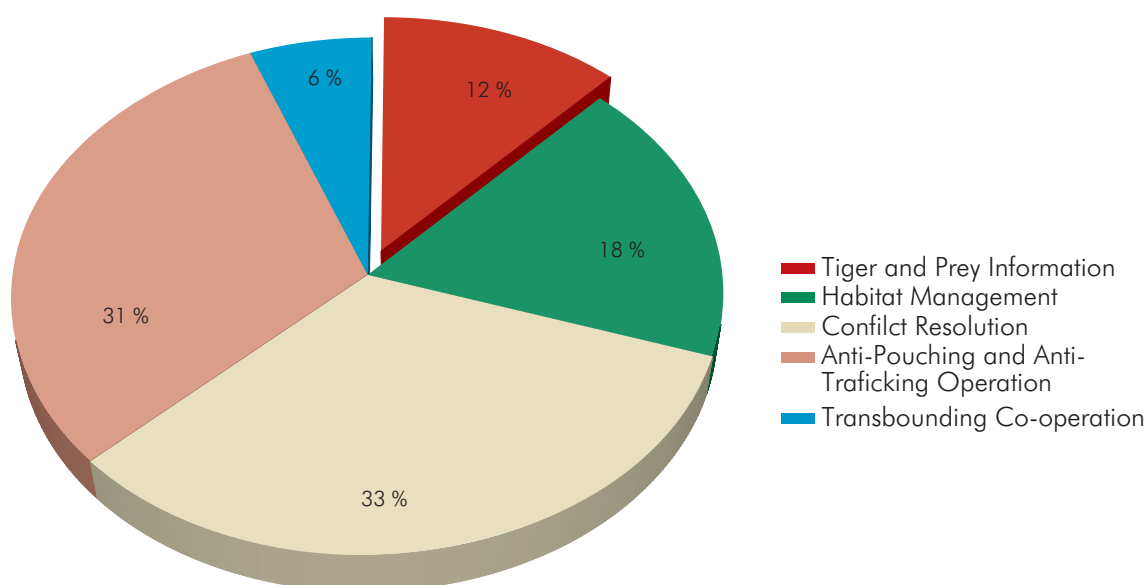
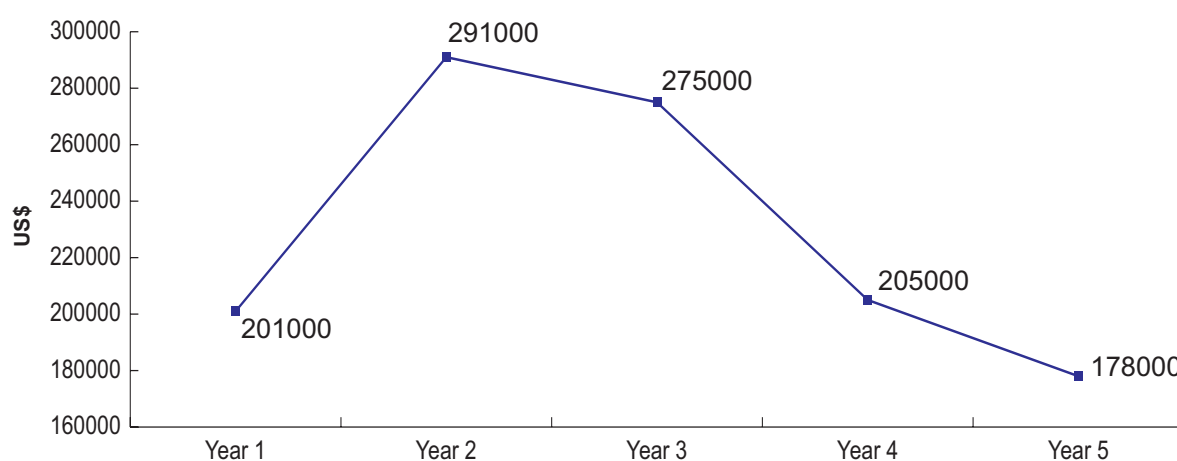


Chart 2 : Budget Distribution by Major Activities**Chart 3 : Yearwise Budget Distribution (in US\$)**

It is revealed from the figures that the total average annual revenue of the four protected areas (SWR, BNP, CNP and PWR) amounts to approximately Rs52 million. Of this, the buffer zone communities receive 50% under the buffer zone policy. The remaining revenue (Rs26 million) goes to the national treasury.

The total average annual budget set aside by the government for these four protected areas is approximately Rs35 million. Thus, the revenue and budget gap is over Rs9 million per year. However, the amount invested in the buffer zone directly or indirectly helps support tiger conservation. Considering this

scenario, it is clear that additional sources of funding will be required for the implementation of the tiger action plan.

Considering the areas of interests and scopes (Subchapter 2.3.4), donors and international nongovernmental organizations could be considered the potential sources of funding.

The private sectors such as tourism entrepreneurs and business houses could be involved in various activities of tiger conservation. The local governments (DDCs and VDCs) as well as the Buffer Zone organizations will be equally potential sources of funding.

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Annex 1: Natural History of the Tiger

Typical Characteristics

- Tigers are one of the largest living cats; great range in size between sub-species and sexes.
- Male can be 3 meters long and weigh around 200 kg.
- Tigers are normally solitary, except for females with cubs.
- Tigers are territorial and occupy relatively large habitats: size usually depends on the prey density.
- Lifespan of tigers in the wild is not well known, but some have lived up to 17 years.

Breeding Habits

- Mating takes place all year round.
- Gestation is around 103 days and an average litter is two or three cubs.
- Cubs reach independence between 18 and 28 months.
- Females begin breeding at age 3 and continue until age 9 or 10.
- They usually reproduce every two years.
- Males start to breed when they are four or five years old.

Prey

- Tigers feed predominately on large deer species and wild boar.
- Occasionally, they will kill larger species

such as wild cattle, elephant and rhino calves.

- They are also opportunistic and will kill monkeys, birds, reptiles and fish as well as more unusual prey such as crocodiles and leopards.
- Males have been known to kill cubs fathered by other tigers.

Distribution

Tigers have existed on the Asian sub-continent since prehistoric times. Various records and descriptions about tigers are found in century-old literature and monuments. The tiger is revered in many cultures and religions of the world. It is the carrier of the Goddess Durga in the Hindu religion. Beautiful murals depicting tigers are found in many, century-old Hindu temples and Buddhist monasteries.

Of the eight tiger subspecies found in the world, the Royal Bengal Tiger (*Panthera tigris tigris*) is found on the Indian sub-continent - i.e., the countries of Bangladesh, Bhutan, India, Western Myanmar, and Nepal (Table 1). This subspecies accounts for approximately 60 percent of all the subspecies remaining in the world today; it, therefore, has the best chance of long-term survival.

Until the 1950s, tigers were found all along the forests of lowland Nepal, South of the

Himalayan Range. Tiger distribution, in Nepal, is not documented for elevations higher than the Churia Hills (Siwalik) i.e., approximately 1500 m.; although its presence is recorded above 4000 m. in Bhutan (McDougal and Tshering 1998). Absence of the tiger, in Nepal, from higher elevations, may be attributed to: (1) the loss and fragmentation of its habitat, (2) high human density and its resulting pressure on the forest, and (3) depletion of the natural prey base.

Currently, the tiger distribution is more or less restricted to the protected areas, and the adjoining forests. There are still some forest areas, outside protected areas, however, where tigers still occur. Conservation of these forests is important for maintaining the available land base for tigers, and for maintaining the corridors between habitats for their dispersal.

When tiger census surveys are conducted, local people are interviewed to verify field results. Confusion sometimes occurs because, in many places in Nepal, both tigers and leopards are called by the same word, *bagh*. These animals can be differentiated easily, however, based on their body size and coat pattern. The tiger has black stripes on its body and face, against a pale, yellowish coat. Stripe patterns are distinctive in every tiger. The leopard is smaller than the tiger, and has spots on its coat, which is also a pale, yellowish color.

Size

The tiger, the largest of the cats, is the ultimate

land predator. It is capable of killing animals several times its own size. The average size of a male Bengal tiger is slightly less than three meters; that of a female is about 2.5 m. The average weight of a male tiger is 180-230 kg., rarely exceeding 250 kg.; whereas, the female weighs about 135-185 kg. (Prater 1971).

Habitat

The tiger is a territorial animal. It occupies a relatively large habitat, depending on the availability of the prey species. Its ideal habitat includes forests, with tall alluvial grasslands that have water. Prime habitat provides sufficient cover for concealment, for stalking its prey, and for hiding its kills.

The tiger is the top predator in the food pyramid of an ecosystem. As such, it is also an indicator of the health of that ecosystem. The tiger is an opportunistic hunter, preying upon animals of all sizes, ranging from the adult Gaur (*Bos gaurus*), to the Langur (*Presbytes entellus*), to birds. To be more economical, however, it normally preys upon large ungulates, weighing on average between 50 - 100 kg. (McDougal and Tshering 1998, WWF 1998). The tiger will occasionally kill elephant and rhino calves. (Males have been known to kill cubs sired by other male tigers, to ensure their territorial superiority and genetic inheritance.) A tiger makes 40 to 50 kills a year, representing approximately 3,000 kg. of prey (McDougal and Tshering 1998).

In Nepal, specifically, the tiger preys upon a wide variety of prey species, including the

Sambar deer (*Cervus unicolor*), swamp deer (*C. duvauceli*), spotted deer (*Axis axis*), hog deer (*Axis porcinus*), barking deer (*Muntiacus muntjac*), and wild pig (*Sus scrofa*). The Sambar deer is the most preferred prey species (Seidensticker and McDougal 1993).

Domestic livestock are also preyed upon, if they are found in the tiger habitat. In sub-optimal habitat, where natural prey is limited, tigers can survive, occasionally, by preying upon domestic livestock, as a supplement to their diet of natural prey. Tigers eventually disappear from areas where natural prey is depleted, even though livestock is available as an alternative prey.

Tigers rarely approach human settlements. A normal tiger always avoids contact with human beings. They do not constitute a part of the tiger's natural prey. Hunger, though, is the most likely factor that overrides the tiger's aversion to man (McDougal 1987). There are certain circumstances when a tiger will kill human beings. The incidence of man-eating cases has been associated with: an incapacitated tiger; the escalation of competition among males; a disturbance in the natural predator-prey balance, due to increased human interference; tigers pushed to a marginal habitat; and dispersing individuals. There are many man eating cases that are without any clear explanations.

Social Dynamics

The tiger is a solitary animal. The most frequent social interaction is between a female and

her young. An adult male and female are associated briefly, for 2-3 days, for mating. This association fades, once the cubs are born. Adults of the same sex rarely associate.

Female tigers compete for resources, whereas males compete for females. Females establish and maintain resource-based territories, large enough to maintain themselves and to raise their offspring. Both tiger density and the home range size are directly related to the habitat quality (availability of prey and cover). In prime habitat, which contains an abundance and variety of ungulates such as the alluvial grasslands of CNP, BNP, and SWR-the home range of a female tiger may be only 20 km², or even less (Smith 1993). In the Russian Far East, however, a female requires 450 km² (Miquelle, D. G., et al 1999).

The territorial size for female tigers is also influenced by the territorial turnover rate. When an old female dies, its vacant territory is often occupied by a young female (usually one of her daughters). Otherwise, females holding the territory in the adjoining area, may expand their territory to include the vacant area. The female maintains a mutually exclusive, non overlapping territory; whereas, a male tiger's home range may encompass the home ranges of two to seven adult females.

Tigers may defend their territories from intruders by fighting and chasing them away. In general, they defend their territories by spraying urine (scent) on trees and bushes; and by marking their traveling route (by making scrapes on the ground), while patrolling. Tigers

mark more heavily at their territorial boundaries, rather than in the interior of their territories. Spraying and scraping are used interchangeably, depending on the habitat types. Scrapes are common in the grasslands, where there are very few trees for urine spray; whereas, in a forested area, urine spray on a tree stump is more common (Smith et al. 1989).

Population Dynamics

Tigers have a polygamous mating system. Mating takes place all year round; many tigers prefer, however, to mate after the rains. The gestation period is short, only 102-105 days (i.e., 15-16 weeks). The litter size is normally three. Cubs are generally born between the months of February and May. A female with small cubs keeps a low profile; the cubs spend most of their time in and around the liar. When the cubs are about 6 months old, they start accompanying their mother on her hunting trips.

Cub mortality, during that first year, reaches almost 34 percent; whereas, during the second year, the mortality lowers to 17 percent (Smith and McDougal 1991). Consequently, when females with cubs are recorded in the wild, generally, there are just two cubs accompanying their mother.

Male tigers attain maturity at the age of four years, while females start breeding at three years of age. In prime habitat, a tigress may give birth to cubs every two years, until she is ten years old. The average reproductive life of a female is just about six years; whereas,

that of male is less than three years. The life span of a tiger in the wild is estimated to be less than 20 years (WWF 1998).

Dispersal

Cubs become independent of their mother, between 19 and 28 months (Smith 1993). At this age, these cubs, or sub-adults, leave their natal area and attempt to seek areas for establishing their own territories. This is the most critical and dangerous period for their survival. The mortality rate for dispersing sub-adult males is 40 percent in CNP.

Generally, male sub-adults travel long distances from their natal areas. Females, on the other hand, settle adjacent to their mother; the latter often shifting her territory slightly, to accommodate her daughters. Even if territory is not available near their mother, female tigers disperse shorter distances than males, and rarely settle in marginal habitat.

The shrinkage of habitat limits the dispersal opportunities for tigers. Many of the protected areas in the Terai have already reached saturation, with a high density of residents. This situation causes intense competition for areas that contain the best breeding habitat. Consequently, frequent fights erupt between individuals of the same sex, particularly males. Hence, the turn-over rate becomes very rapid, shortening the breeding lives in a population (McDougal and Tshering 1998).

While seeking a place to settle, dispersing male sub-adults must pass through areas already occupied by territorial males, and are

often pushed to marginal habitat on the periphery of the parks. Due to this high competition among males, and the unavailability of suitable habitat, these dispersing male sub-adults are likely to kill livestock, as part of their diet. This increases livestock depredation, which in turn, puts the tiger in direct conflict with the local people. The resulting villager retaliation may eventually lead to the poisoning of the livestock carcass, causing the death of the tiger.

Legal Status

Considering its endangered status, the tiger is listed in Appendix I of CITES (Convention on International Trade of Endangered Flora and Fauna), which bans international trade of the tiger or its parts. The tiger is also protected by Nepal's National Parks and Wildlife Conservation Act 2029, and is listed in its Appendix I. According to the Act, the penalty for a person-involved in the poaching of a tiger, or in the trading of its parts-is a fine of Rs. 50,000 - 100,000, or imprisonment of S- 15 years, or both. Despite such stringent penalties, some poaching and trade in tiger parts is still taking place, because of the high demand for tiger parts in the international market.

The bones of an adult male tiger may weigh up to 15 kg., and those of a female about 10 kg. In an international market in the Far East, tiger bones may fetch a thousand dollars a kilogram (McDougal and Tshering 1998). All parts of the tiger-such as its bone and skin; and some of its organs, such as its penis, canine teeth, and claws-have a market, due to certain traditional beliefs that have no scientific evidence. It is difficult to track down a tiger-poaching case in the field, because nearly all of the parts are taken by the poachers; whatever remains can be disposed of easily.

The establishment of anti-poaching units (APUs) in protected areas, with the cooperation of local people and various organizations, have curtailed the rate of poaching and trade in tiger parts. The provision of a reward to informants-whose information leads to the apprehension of culprits involved in such illegal activities-has been effective. The APUs in Nepal are supported by the International Trust for Nature Conservation (ITNC) and the WWF Nepal Program.

Annex 2:

Summary Programs and Budget in the Tiger Range Protected Areas

Shuklaphanta Wildlife Reserve and Buffer Zone

(Amount in thousands NRs.)

Program Activities	Cost
Biodiversity Conservation	
Species Conservation Activities (6)	12,250
Habitat Management Activities (8)	32,390
Anti-Poaching Operation Activities (5)	13,830
Human Resource Development Activities (7)	2,565
Conservation Education Activities (9)	4,930
	66,015
Buffer Zone Development	
Community Development Activities (7)	21,645
Community Forest Management Activities (7)	3,520
Skill Development& Income Generating Activities (9)	3,100
Institutional Development (7)	3,215
Extension Program Activities (2)	1,080
Alternate Energy Promotion Activities (2)	14,100
Women Development & Empowerment Activities (8)	4,640
	49,610
Eco-Tourism Management	
Ecotourism Promotion Activities (6)	5,685
	5,685
Infrastructure Development	
Infrastructure Development Activities (14)	12,550
Infrastructure development to Hattisar Activities (8)	4,820
	17,370
Reserve Management	
Fulfill vacant positions	44,480
Recruit additional staff	23,910
	68,390
Operation Modalities and Evaluation	2,595

Bardia National Park and Buffer Zone

(Amount in thousands NRs.)

Management Plan 2001-2005		Total Cost
1.	Human Resource Development	45,000,000
2.	Infrastructure and Equipment	
	2.1 Building construction	18,000,000
	2.2 Building upgrade and renovation	300,000
	2.3 RTCPA operation and maintenance	300,000
	2.4 Electrification	300,000
	2.5 Water supply	700,000
	2.6 Road and Trails	8,000,000
	2.7 Equipment	10,000,000
	2.8 Transportation	10,000,000
3.	Ecological information	
	3.1 Baseline information	500,000
	3.2 Research through RTCPA	20,000,000
4.	Development Projects	500,000
5.	Encroachment of government land	200,000
6.	Natural Resource management	500,000
7.	Extension of Buffer zone	200,000
8.	Park people relation	15,000,000
9.	Antipoaching operation	10,000,000
10.	Information dissemination	500,000
11.	Corridor connectivity	15,000,000
12.	Park zonation	1,000,000
13.	Monitoring and Evaluation	500,000
14.	Review and update of management plan	1,000,000
Total		157,500,000

Tourism Plan 2001-2006	Total Cost
1. Attraction Management Programs	14,500,000
2. Tourism Facilitation Programs	48,300,000
3. Community Benefit Programs	12,700,000
Total	75,500,000

Chitwan National Park and Buffer Zone

(Amount in thousands NRs.)

	Total Cost
Park Management	
Management Zones	420
Grassland Habitat Conservation	16,784
Wetland Habitat Conservation	5,820
Forest Habitat Conservation	5,720
Wildlife Species Conservation	18,810
Cultural Heritage Conservation	3,215
Conservation Education	14,420
Resource Sharing and Access	1,550
Law Enforcement	12,810
Institutional Strengthening	189,492
Hattisar Management	50,876
Physical Infrastructures and Logistics	70,278
Coordination and Inter-sector linkages	10,410
Research and Development	12,740
Monitoring and Evaluation System	5,340
Tourism Management	8,640
Total	427,325

Barandabhar Forest Corridor

Buffer Zone	1,720
Grassland	1,250
Wetland	3,230
Wildlife	1,720
Fringe Area Management	2,720
Community Development and Income Generation	3,975
Tourism Development	900
Support to Institutional Strengthening	2,075
Sub total	17,590
Program Administration Cost (20% of Program Cost)	3,518
Total	21,108

Buffer Zone Management	Total	Park Management	Others
Community Development	44,042.513	17,986.988	26,055.525
Conservation Program	43,552.096	17,793.988	25,758.108
Income Generating	17,668.442	11,835.992	5,832.450
Conservation Education	8,497.746	5,881.496	2,616.250
Sub total	113,760.797	53,498.464	60,262.333
Program Administration	5,375.000	5,375.000	-
Total	119,135.797	58,873.464	60,262.333

Parsa Wildlife Reserve and Buffer Zone

(Amount in thousands NRs.)

Wildlife Habitat Conservation	
Activities	Total Cost
Reserve Boundary Demarcation	850
Resettlement of human enclaves	10,075
Strengthening habitat protection	16,660
Waterhole management	2,220
Forest habitat management in the Reserve	—
Grassland management	1,570
Habitat conservation in BZ, corridor	3,450
Sub-total	34,825
Species Conservation	
Baseline Survey and action plan	6,250
Establish wildlife welfare services	1,730
Minimize environmental hazards	170
Mgmt Research and Information	4,765
Sub-total	12,915
Institutional Capacity Enhancement	
Reserve infrastructure enhancement	9,700
Skill enhancement of Reserve staff	4,400
Enhancing Hattisar capacity	6,175
Strengthening BZ institutions	10,920
Inter-sector linkages	1,100
Gender main streaming and women	1,930
STG empowerment	505
Conservation education & interpretation	4,975
Involvement of public and private sector	125
Monitoring and Evaluation	1,450
Sub-total	41,280
Buffer Zone Management/Community Development	
Ownership development	1,000
Alternative resource development	3,790
Livelihood improvement	1,510
Minimizing crop damage	1,950
Alternative to forest resources	2,095
Infrastructure development	5,750
Ecotourism development	7,145
Sub-total	23,240
Office and Staff Management	
a. Reserve office and Staff mgmt.	47,200
b. Hattisar office and staff mgmt.	15,625
Sub-total	62,825
Total	175,085

Annex 3: Programs and Budget Breakdown for the Tiger Conservation Action Plan

Line Items Summary Budget Breakdown

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.1 Objective 1. Tiger and Prey Information	25000	26000	22000	39000	17000	10000	139000
2.2.2 Objective 2. Habitat Management	26000	40000	16000	28000	17000	85000	212000
2.1 Develop landscape approach	9000	21000	9000	18000	8000	25000	90000
2.2 Develop alternative resource	7000	3000	0	0	6000	55000	71000
2.3 Strengthen coordinated efforts	10000	16000	7000	10000	3000	5000	51000
2.2.3 Objective 3. Conflicts Resolution	199000	42000	76000	114000	35000	72000	375000
3.1 Develop alternatives for natural resource base	36000	0	16000	20000	0	0	36000
3.2 Develop safety measures	25000	1000	10000	5000	5000	4000	25000
3.3 Develop a community based mechanism of compensation	6000	9000	5000	10000	7000	30000	67000
3.4 Develop a community awareness program	102000	22000	22000	29000	16000	13000	102000
3.5 Database Management and Research	30000	10000	23000	50000	7000	25000	145000
2.2.4 Objective 4. Anti-poaching and Anti-trafficking Operations	358000	79000	65000	80000	60000	74000	358000
4.1 Strengthen institutional network	223000	42000	37000	51000	40000	53000	223000
4.2 Strengthen anti-poaching efforts	91000	28000	17000	17000	14000	15000	91000
4.3 Enhance public awareness programs	44000	9000	11000	12000	6000	6000	44000
2.2.5 Objective 5. Transboundary Cooperation	66000	20000	18000	9000	11000	8000	66000
5.1 Strengthen transboundary cooperation	19000	12000	3000	2000	1000	1000	19000
5.2 Maintain ecological integrity	30000	5000	7000	5000	8000	5000	30000
5.3 Promote tiger tourism	17000	3000	8000	2000	2000	2000	17000
Grand Total	674000	207000	197000	270000	140000	249000	1150000

Yearly Summary Budget Breakdown

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.1 Objective 1. Tiger and Prey Information	16000	46000	35000	26000	16000	139000
2.2.2 Objective 2. Habitat Management	14000	70000	51000	41000	36000	212000
2.1 Develop landscape approach	4000	28000	24000	17000	17000	90000
2.2 Develop alternative resource	5000	18000	18000	15000	15000	71000
2.3 Strengthen coordinated efforts	5000	24000	9000	9000	4000	51000
2.2.3 Objective 3. Conflicts Resolution	72000	92000	100000	67000	44000	375000
3.1 Develop alternatives for natural resource base	0	16000	20000	0	0	36000
3.2 Develop safety measures	1000	10000	5000	5000	4000	25000
3.3 Develop a community based mechanism of compensation	20000	15000	13000	11000	8000	67000
3.4 Develop a community awareness program	22000	22000	29000	16000	13000	102000
3.5 Database Management and Research	29000	29000	33000	35000	19000	145000
2.2.4 Objective 4. Anti-poaching and Anti-trafficking Operations	79000	65000	80000	60000	74000	358000
4.1 Strengthen institutional network	42000	37000	51000	40000	53000	223000
4.2 Strengthen antipoaching efforts	28000	17000	17000	14000	15000	91000
4.3 Enhance public awareness programs	9000	11000	12000	6000	6000	44000
2.2.5 Objective 5. Transboundary Cooperation	20000	18000	9000	11000	8000	66000
5.1 Strengthen transboundary cooperation	12000	3000	2000	1000	1000	19000
5.2 Maintain ecological integrity	5000	7000	5000	8000	5000	30000
5.3 Promote tiger tourism	3000	8000	2000	2000	2000	17000
Grand Total	201000	291000	275000	205000	178000	1150000

Line Items Summary Budget Breakdown for objective 1. Tiger and Prey Information

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.1 Objective 1. Tiger and Prey Information	25000	26000	22000	39000	17000	10000	139000
1.1 Enhance knowledge and information base	19000	23000	16000	27000	13000	0	98000
• Develop a protocol for tiger and prey base monitoring	1000	1000	1000	0	1000	0	4000
• Develop minimum impact code to maintain undisturbed environment for tiger and its preys	1000	2000	1000	0	1000	0	5000
• Develop a priority list of tiger related research works	1000	1000	1000	0	1000	0	4000
• Conduct studies on the population dynamics of tiger and prey species	2000	3000	1000	5000	1000	0	12000
• Continue camera trap monitoring of tiger in the TCLs	2000	2000	2000	5000	1000	0	12000
• Conduct tiger survey by looking for tiger signs , ungulate pel-lets, deer browse; responses of the local people	2000	2000	2000	5000	1000	0	12000
• Conduct survey for presence and absence of tigers	1000	2000	1000	2000	1000	0	7000
• Conduct prey base survey to estimate relative abundance	2000	2000	2000	5000	1000	0	12000
• Maintain the tiger database using the camera traps	2000	2000	1000	5000	1000	0	11000
• Explore for the cooperation on tiger research with the academic institutions	1000	2000	1000	0	2000	0	6000
• Review the current management plans from the perspective of tiger and prey base conservation	2000	2000	1000	0	1000	0	6000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Develop a project in the TCLs to enhance understanding of dispersal corridors and the survival of dispersing tigers outside protected areas 	2000	2000	2000	0	1000	0	7000
1.2 Strengthen human and physical resources	6000	3000	6000	12000	4000	10000	41000
<ul style="list-style-type: none"> Conduct on-the-job training for the protected area personnel on tiger and prey base monitoring 	2000	2000	2000	2000	1000	0	9000
<ul style="list-style-type: none"> Improve the existing physical infrastructure of protected area management on tiger monitoring 	1000	0	1000	0	1000	10000	13000
<ul style="list-style-type: none"> Equip the existing biodiversity database focusing on tiger and prey base for efficient outputs 	1000	0	1000	10000	1000	0	13000
<ul style="list-style-type: none"> Feasibility survey for developing tiger orphanage and alternative captive management facilities 	2000	1000	2000	0	1000	0	6000

Yearly Detail Budget Breakdown for Objective 1 Tiger and Prey Information

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.1 Objective 1. Tiger and Prey Information	16000	46000	35000	26000	16000	139000
1.1 Enhance knowledge and information base	15000	38000	17000	14000	14000	98000
• Develop a protocol for tiger and prey base monitoring	4000	0	0	0	0	4000
• Develop minimum impact code to maintain undisturbed environment for tiger and its preys	0	5000	0	0	0	5000
• Develop a priority list of tiger related research works	4000	0	0	0	0	4000
• Conduct studies on the population dynamics of tiger and prey species	0	6000	0	6000	0	12000
• Continue camera trap monitoring of tiger in the TCLs	0	3000	3000	3000	3000	12000
• Conduct tiger survey by looking for tiger signs, ungulate pel-lets, deer browse; responses of the local people	0	3000	3000	3000	3000	12000
• Conduct survey for presence and absence of tigers	4000	3000	0	0	0	7000
• Conduct prey base survey to estimate relative abundance	0	0	6000	0	6000	12000
• Maintain the tiger database using the camera traps	3000	2000	2000	2000	2000	11000
• Explore for the cooperation on tiger research with the academic institutions	0	3000	3000	0	0	6000
• Review the current management plans from the perspective of tiger and prey base conservation	0	6000	0	0	0	6000
• Develop a project in the TCLs to enhance understanding of dispersal corridors and the survival of dispersing tigers outside protected areas	0	7000	0	0	0	7000
1.2 Strengthen human and physical resources	1000	8000	18000	12000	2000	41000
• Conduct on-the-job training for the protected area personnel on tiger and prey base monitoring	1000	2000	2000	2000	2000	9000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<ul style="list-style-type: none"> Improve the existing physical infrastructure of protected area management on tiger monitoring 	0	3000	10000	0	0	13000
<ul style="list-style-type: none"> Equip the existing biodiversity database focusing on tiger and prey base for efficient outputs 	0	0	3000	10000	0	13000
<ul style="list-style-type: none"> Feasibility survey for developing tiger orphanage and alternative captive management facilities 	0	3000	3000	0	0	6000

Line Items Detail Budget Breakdown for Objective 2 Habitat Management

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.2 Objective 2. Habitat Management	26000	40000	16000	28000	17000	85000	212000
2.1 Develop landscape approach	9000	21000	9000	18000	8000	25000	90000
• Upgrade the central GIS lab in DNPWC and link with the field-based labs	2000	2000	1000	10000	2000	5000	22000
• Organize, in cooperation with NTNC-BCC, capacitybuilding programs for the protected area and forestry personnel	2000	15000	2000	2000	2000	0	23000
• Restore vegetation and water hole in the geographical connections and forest corridors	1000	0	1000	1000	1000	10000	14000
• Manage the grassland habitats and waterholes to maintain a healthy population of tiger prey species.	1000	0	1000	1000	1000	10000	14000
• Monitor habitat quality, both potential and priority	2000	2000	2000	2000	1000	0	9000
• Update digital base maps	1000	2000	2000	2000	1000	0	8000
2.2 Develop alternative resource	7000	3000	0	0	6000	55000	71000
• Manage grasslands in the protected areas	1000	1000	0	0	1000	5000	8000
• Construct/maintain cattle pool to control livestock grazing in the tiger habitats	1000	0	0	0	1000	5000	7000
• Construct/maintain fire lines for fire control	1000	0	0	0	1000	10000	12000
• Construct/maintain watchtower for habitat inspection	1000	0	0	0	1000	10000	12000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Plant indigenous tree species in the open areas or implement the enrichment plantation of de-graded forest areas. 	2000	1000	0	0	1000	10000	14000
<ul style="list-style-type: none"> Provide grant facilities to the local residents for alternatives in lieu of stall-feeding of livestock, such as biogas plants, purchasing buffaloes, forming dairy cooperatives. 	1000	1000	0	0	1000	15000	18000
2.3 Strengthen coordinated efforts	10000	16000	7000	10000	3000	5000	51000
<ul style="list-style-type: none"> Conduct coordination meetings of the protected area managers and forest officials on identifying priority and potential tiger habitats and implementing adaptive management interventions 	2000	3000	2000	0	1000	0	8000
<ul style="list-style-type: none"> Prepare operational guidelines for the user groups and committees of the buffer zone and community forests on the habitat management activities in the potential tiger habitats, such as grazing control, sewage control and garbage management 	2000	2000	1000	0	0	0	5000
<ul style="list-style-type: none"> Review/integrate tiger conservation in forest management plans 	2000	2000	1000	0	0	0	5000

Yearly Detail Budget Breakdown for Objective 3 Conflict Resolution

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
• Prepare operational plans for the restored areas by involving local communities.	2000	2000	1000	0	0	0	5000
• Establish and operate veterinary services for the livestock in the buffer zones	1000	1000	0	10000	1000	5000	18000
• Arrange study tours for the representatives of the community based organizations to the sites of successful forest management leading towards tiger habitats	1000	6000	2000	0	1000	0	10000

Yearly Detail Budget Breakdown for Objective 2 Habitat Management

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.2 Objective 2. Habitat Management	14000	70000	51000	41000	36000	212000
2.1 Develop landscape approach	4000	28000	24000	17000	17000	90000
• Upgrade the central GIS lab in DNPPWC and link with the field-based labs	0	15000	7000	0	0	22000
• Organize, in cooperation with NTNC-BCC, capacity building programs for the protected area and forestry personnel	3000	5000	5000	5000	5000	23000
• Restore vegetation and water hole in the geographical connections and forest corridors	0	2000	4000	4000	4000	14000
• Manage the grassland habitats and waterholes to maintain a healthy population of tiger prey species.	0	2000	4000	4000	4000	14000
• Monitor habitat quality, both potential and priority	1000	2000	2000	2000	2000	9000
• Update digital base maps	0	2000	2000	2000	2000	8000
2.2 Develop alternative resource	5000	18000	18000	15000	15000	71000
• Manage grasslands in the protected areas	0	2000	2000	2000	2000	8000
• Construct/maintain cattle pool to control livestock grazing in the tiger habitats	0	4000	3000	0	0	7000
• Construct/maintain fire lines for fire control	0	3000	3000	3000	3000	12000
• Construct/maintain watchtower for habitat inspection	0	3000	3000	3000	3000	12000
• Plant indigenous tree species in the open areas or implement the enrichment plantation of de-graded forest areas.	2000	3000	3000	3000	3000	14000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<ul style="list-style-type: none"> Provide grant facilities to the local residents for alternatives in lieu of stall-feeding of livestock, such as biogas plants, purchasing buffaloes, forming dairy cooperatives. 	3000	3000	4000	4000	4000	18000
2.3 Strengthen coordinated efforts	5000	24000	9000	9000	4000	51000
<ul style="list-style-type: none"> Conduct coordination meetings of the protected area managers and forest officials on identifying priority and potential tiger habitats and implementing adaptive management interventions 	1000	2000	2000	2000	1000	8000
<ul style="list-style-type: none"> Prepare operational guidelines for the user groups and committees of the buffer zone and community forests on the habitat management activities in the potential tiger habitats, such as grazing control, sewage control and garbage management 	0	5000	0	0	0	5000
<ul style="list-style-type: none"> Review/integrate tiger conservation in forest management plans 	0	5000	0	0	0	5000
<ul style="list-style-type: none"> Prepare operational plans for the restored areas by involving local communities. 	0	5000	0	0	0	5000
<ul style="list-style-type: none"> Establish and operate veterinary services for the livestock in the buffer zones 	2000	5000	5000	5000	1000	18000
<ul style="list-style-type: none"> Arrange study tours for the representatives of the community based organizations to the sites of successful forest management leading towards tiger habitats 	2000	2000	2000	2000	2000	10000

Line Items Detail Budget Breakdown for Objective 3 Conflict Resolution

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.3 Objective 3. Conflicts Resolution	42000	52000	29000	16000	21000	70000	230000
3.1 Develop alternatives for natural resource base	12000	12000	8000	0	4000	0	36000
• Identify and hand over community forests in the buffer zones	3000	3000	2000	0	1000	0	9000
• Restore the degraded forests in the buffer zone by artificial or natural regeneration	3000	3000	2000	0	1000	0	9000
• Prepare operational plans for the buffer zone community forests for sustainable harvest of natural resources	3000	3000	2000	0	1000	0	9000
• Develop community plantations, by mobilizing local resources and labor, so that local people need not collect their fodder and firewood from tiger habitats.	3000	3000	2000	0	1000	0	9000
3.2 Develop safety measures	5000	8000	4000	1000	2000	5000	25000
• Erect signs of warning to the passersby in the major rights of ways, resource collection sites and shrines.	1000	1000	1000	0	0	5000	8000
• Conduct awareness meetings at the local level during tiger marauding seasons	2000	5000	1000	0	1000	0	9000
• Monitor tigers around the human activity areas	1000	1000	1000	0	0	0	3000
• Take a "man-eater" tiger under control immediately	1000	1000	1000	1000	1000	0	5000
3.3 Develop a community based mechanism of compensation	6000	9000	5000	10000	7000	30000	67000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
• Review conservation policies to incorporate compensation schemes	1000	2000	1000	0	0	0	4000
• Establish community funds for the families of tiger victims.	0	2000	1000	0	2000	15000	20000
• Establish the Help Desk and appoint responsible staff	1000	1000	0	0	1000	0	3000
• Establish Field Rescue Team equipped with vehicles, communication sets and treatment gear	2000	2000	2000	10000	2000	0	18000
• Establishment of relief fund	0	0	0	0	1000	15000	16000
• Explore for the community based human and livestock insurance against wildlife accidents	2000	2000	1000	0	1000	0	6000
3.4 Develop a community awareness program	19000	23000	12000	5000	8000	35000	102000
• Conduct seminars and interactive programs, to emphasize on the co-dependency of humans and the Terai ecosystems; i.e., the health of such ecosystems is important, not only for biodiversity, but also for sus-taining the ecosystem proc-esses, upon which local people and development depend.	2000	5000	2000	0	1000	0	10000
• Develop a curriculum for school children, which portrays tigers as part of the ecosystem, rather than as an object for human exploitation.	3000	3000	1000	0	1000	0	8000
• Develop audiovisual programs, for local people, which focus on tiger biology; they should be entertaining, as well as educational.	5000	1000	2000	0	1000	0	9000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Develop information centers, where problems faced by tigers are publicized; information should be in the form of photo-tos or display cards in local languages. 	2000	3000	2000	5000	1000	15000	28000
<ul style="list-style-type: none"> Encourage people, at the community level, to develop and manage sewage and irrigation canals. 	1000	2000	1000	0	1000	0	5000
<ul style="list-style-type: none"> Make tiger documentary films and exhibits in awareness program 	2000	1000	1000	0	1000	10000	15000
<ul style="list-style-type: none"> Publicize the fact that a strong economic link, between tourism and biodiversity, benefits both local people and conservation efforts. 	1000	3000	1000	0	0	0	5000
<ul style="list-style-type: none"> Prepare guidelines and awareness materials on the sales, distribution and application of toxics such as pesticides, insecticides, poisons etc. 	2000	2000	1000	0	1000	10000	16000
<ul style="list-style-type: none"> Conduct interaction meetings with the government line agencies (e.g. agriculture, livestock, drug administration), nongovernment and private sectors at the grassroots level on the control of sales, distribution and application of toxic materials such as pesticides, insecticides, poisons etc. 	1000	3000	1000	0	1000	0	6000

Yearly Detail Budget Breakdown for Objective 3 Conflict Resolution

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.3 Objective 3. Conflicts Resolution	43000	63000	67000	32000	25000	230000
3.1 Develop alternatives for natural resource base	0	16000	20000	0	0	36000
• Identify and hand over community forests in the buffer zones	0	4000	5000	0	0	9000
• Restore the degraded forests in the buffer zone by artificial or natural regeneration	0	4000	5000	0	0	9000
• Prepare operational plans for the buffer zone community forests for sustainable harvest of natural resources	0	4000	5000	0	0	9000
• Develop community plantations, by mobilizing local resources and labor, so that local people need not collect their fodder and firewood from tiger habitats.	0	4000	5000	0	0	9000
3.2 Develop safety measures	1000	10000	5000	5000	4000	25000
• Erect signs of warning to the passersby in the major rights of ways, resource collection sites and shrines.	0	2000	2000	2000	2000	8000
• Conduct awareness meetings at the local level during tiger marauding seasons	1000	2000	2000	2000	2000	9000
• Monitor tigers around the human activity areas	0	1000	1000	1000	0	3000
• Take a 'man-eater' tiger under control immediately	0	5000	0	0	0	5000
3.3 Develop a community based mechanism of compensation	20000	15000	13000	11000	8000	67000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
• Review conservation policies to incorporate compensation schemes	4000	0	0	0	0	4000
• Establish community funds for the families of tiger victims.	4000	4000	4000	4000	4000	20000
• Establish the Help Desk and appoint responsible staff	3000	0	0	0	0	3000
• Establish Field Rescue Team equipped with vehicles, communication sets and treatment gear	5000	5000	5000	3000	0	18000
• Establishment of relief fund	2000	3000	3000	4000	4000	16000
• Explore for the community based human and livestock insurance against wildlife accidents	2000	3000	1000	0	0	6000
3.4 Develop a community awareness program	22000	22000	29000	16000	13000	102000
• Conduct seminars and interactive programs, to emphasize on the co-dependency of humans and the Terai ecosystems; i.e., the health of such ecosystems is important, not only for biodiversity, but also for sus-taining the ecosystem proc-esses, upon which local people and development depend.	2000	2000	2000	2000	2000	10000
• Develop a curriculum for school children, which portrays tigers as part of the ecosystem, rather than as an object for human exploitation.	2000	2000	2000	2000	0	8000
• Develop audiovisual programs, for local people, which focus on tiger biology; they should be entertaining, as well as educational.	1000	2000	2000	2000	2000	9000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<ul style="list-style-type: none"> Develop information centers, where problems faced by tigers are publicized; information should be in the form of photo-sets or display cards in local languages. 	5000	10000	10000	3000	0	28000
<ul style="list-style-type: none"> Encourage people, at the community level, to develop and manage sewage and irrigation canals. 	1000	1000	1000	1000	1000	5000
<ul style="list-style-type: none"> Make tiger documentary films and exhibits in awareness program 	5000	0	5000	0	5000	15000
<ul style="list-style-type: none"> Publicize the fact that a strong economic link, between tourism and biodiversity, benefits both local people and conservation efforts. 	1000	1000	1000	1000	1000	5000
<ul style="list-style-type: none"> Prepare guidelines and awareness materials on the sales, distribution and application of toxics such as pesticides, insecticides, poisons etc. 	3000	4000	4000	5000	0	16000
<ul style="list-style-type: none"> Conduct interaction meetings with the government line agencies (e.g. agriculture, livestock, drug administration), nongovernment and private sectors at the grassroots level on the control of sales, distribution and application of toxic materials such as pesticides, insecticides, poisons etc. 	2000	0	2000	0	2000	6000

Line Items Detail Budget Breakdown for Objective 4 Anti-poaching and Anti-trafficking Operations

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.4 Objective 4. Anti-poaching and Anti-trafficking Operations							
4.1 Strengthen institutional network							
<ul style="list-style-type: none"> Conduct CITES implementation training for the management and scientific authorities, government officers at the custom, police, and other relevant agencies. <p>The topics will include identification of wildlife and their derivatives especially tiger body parts, forensic procedures, national and international laws on the control of illegal trade and poaching.</p>	67000	127000	61000	42000	36000	25000	358000
	40000	76000	41000	37000	29000	0	223000
<ul style="list-style-type: none"> Conduct transboundary meetings with the neighboring countries focusing on the cooperation for the control of illegal trade in wildlife and their derivatives. 	5000	10000	2000	2000	1000	0	20000
<ul style="list-style-type: none"> Prepare updated reports for the national, regional and international meetings pertinent to CITES, GTF, IUCN, TRAFFIC, WCPA, WTO and others as appropriate. 	3000	6000	6000	0	2000	0	17000
<ul style="list-style-type: none"> Participate in the national, regional and international meetings, conferences and seminars that are pertinent to the control of illegal trade and poaching. 	5000	2000	2000	0	1000	0	10000
	2000	2000	10000	0	1000	0	15000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Maintain records of incidents related to poaching, illegal trade, confiscation etc on tiger and other wildlife species 	2000	2000	2000	0	1000	0	7000
<ul style="list-style-type: none"> Identify key customs for CITES enforcement 	2000	2000	2000	0	1000	0	7000
<ul style="list-style-type: none"> Prepare a status report on the rights and duties of stakeholders who are directly or indirectly responsible for the protection of tigers in the wild. 	2000	1000	1000	0	1000	0	5000
<ul style="list-style-type: none"> Conduct coordination meetings to review on the status of tigers in the wild as well as on the issues of poaching of tigers and smuggling tiger body parts. 	2000	2000	1000	0	1000	0	6000
<ul style="list-style-type: none"> Conduct feasibility survey for the need to have cooperative agreements between enforcement agencies and transport companies (air, rail, bus, freight, express courier) 	2000	1000	1000	0	1000	0	5000
<ul style="list-style-type: none"> Organize awareness interactions with the transport media on the illegal trade issue. 	1000	2000	1000	0	1000	0	5000
<ul style="list-style-type: none"> Review the current strengths of the antipoaching capacity of the protected areas such as human resources (number of scouts, guard posts and the protection unit); physical facilities (field gear, vehicles, elephants, communication systems, reporting systems); intelligence network (reporting, database on poachers and smugglers, coordination with the authorities of forest, police, 							

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
custom, postal service etc.); and financial aspects government budget, incentives, rewards, emergency fund, conservation fee) and others	2000	2000	2000	0	1000	0	7000
• Conduct regular training programs for the antipoaching units on techniques of intelligence works, use of equipment and other relevant fields.	2000	10000	2000	5000	2000	0	21000
• Equip the antipoaching units with the field gear and basic equipment (binoculars, communication ets, GPS, kitchen sets etc)	0	1000	0	15000	5000	0	21000
• Procure physical resources to enhance antipoaching activities, such as four wheel drive vehicle, raft, motorboat, elephant, motorcycle, bicycles etc.	0	1000	1000	15000	5000	0	22000
• Train DNPWC professional staff to take responsibility as a tiger authority	2000	10000	2000	0	1000	0	15000
• Conduct a series of training workshops for the key individuals and/ or civil servants-such as cus-toms officials, postal workers, police, etc. regarding threats to tigers, illegal trade, and the identification of tiger parts.	3000	15000	3000	0	1000	0	22000
• Study on the feasibility of mobilizing buffer zone community based organizations including youth groups in antipopaching operations	2000	5000	1000	0	1000	0	9000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Prepare case studies on the arrested poachers and smugglers to find out the socio-economic and psychological factors and alternatives to the wildlife crimes (such as poverty, unemployment, temptation, compellation etc.) 	3000	2000	2000	0	2000	0	9000
4.2 Strengthen antipoaching efforts	20000	39000	14000	5000	3000	10000	91000
<ul style="list-style-type: none"> Prepare antipoaching operation plans at the tiger conservation landscape level 	2000	2000	2000	0	1000	0	7000
<ul style="list-style-type: none"> Review the existing management plans for the protected areas including buffer zones from the perspective of tiger conservation 	2000	2000	1000	0	0	0	5000
<ul style="list-style-type: none"> Conduct orientation training programs for the protection unit deployed in the protected areas. 	3000	15000	2000	0	1000	0	21000
<ul style="list-style-type: none"> Review the post-conflict scenario for tiger conservation 	2000	1000	2000	0	0	0	5000
<ul style="list-style-type: none"> Prepare guidelines on reporting, valuation and authentication of the tiger related incidents for direct compensation to the affected people 	2000	1000	2000	0	0	0	5000
<ul style="list-style-type: none"> Establish a network of candid informers that will eventually lead to arrest poachers and smugglers who handle tiger body parts. 	2000	5000	2000	5000	1000	0	15000
<ul style="list-style-type: none"> Review the existing NPWC Act in respect to the changing national and international perspectives so that criminals and potential criminals will be grossly discouraged. 	1000	1000	0	0	0	0	2000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Organize interaction meetings with the civil societies to discuss on enhancing political commitment in combating poaching and illegal trade. 	1000	2000	0	0	0	0	3000
<ul style="list-style-type: none"> Conduct advocacy and lobbying activities during strategic events (wildlife week, environment day, biodiversity day, regular campaigns) at a high political level as a means of awareness to garner political will to address tiger conservation, poaching and illegal trade. 	2000	6000	2000	0	0	0	10000
<ul style="list-style-type: none"> Conduct feasibility survey of establishing a sustainable mechanism of providing appropriate incentives for the informers 	1000	1000	1000	0	0	0	3000
<ul style="list-style-type: none"> Organize interaction meetings at the community levels to finalize on the mechanism of incentives 	1000	2000	0	0	0	0	3000
<ul style="list-style-type: none"> Establish an endowment fund for incentives 	1000	1000	0	0	0	10000	12000
4.3 Enhance public awareness programs	7000	12000	6000	0	4000	15000	44000
<ul style="list-style-type: none"> Conduct nature conservation workshops and seminars, to provide basic knowledge; in-crease awareness-for game scouts, forest guards, rangers, and officers of their role in tiger and biodiversity conservation. 	2000	5000	2000	0	1000	0	10000

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
<ul style="list-style-type: none"> Bring out public notice on the importance of tigers, and legal fines against the tiger related offenses in the buffer zones and potential areas of illegal trades 	0	1000	1000	0	1000	0	3000
<ul style="list-style-type: none"> Incorporate tiger conservation information and fines against tiger related offenses in the school level textbooks in the buffer zones 	1000	2000	1000	0	0	0	4000
<ul style="list-style-type: none"> Install kiosks on the importance of tigers, and legal fines against the tiger related offenses at the major tourist arrival-departure locations such as airports, visitors information centers, immigration offices, protected areas entry fee collection centers etc. 	2000	2000	1000	0	1000	10000	16000
<ul style="list-style-type: none"> Design, produce and distribute educational materials (posters, booklets, websites) based on the scientific background of tigers (ecological importance, balance in nature etc), cultural values (Bagh Bhairav, Namo Buddha, Dasain festival etc), and messages of social leaders and celebrities 	2000	2000	1000	0	1000	5000	11000

Yearly Detail Budget Breakdown for Objective 4 Antipouching and Anti-trafficking Operation

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.4 Objective 4. Anti-poaching and Anti-trafficking Operations						
4.1 Strengthen institutional network						
<ul style="list-style-type: none"> Conduct CITES implementation training for the management and scientific authorities, government officers at the custom, police, and other relevant agencies. The topics will include identification of wildlife and their derivatives especially tiger body parts, forensic procedures, national and international laws on the control of illegal trade and poaching. 	79000 42000	65000 37000	80000 51000	60000 40000	74000 53000	358000 223000
<ul style="list-style-type: none"> Conduct transboundary meetings with the neighboring countries focusing on the cooperation for the control of illegal trade in wildlife and their derivatives. 	4000 2000	4000 3000	4000 4000	4000 4000	4000 4000	20000 17000
<ul style="list-style-type: none"> Prepare updated reports for the national, regional and international meetings pertinent to CITES, GTF, IUCN, TRAFFIC, WCPA, WTO and others as appropriate. 	2000	2000	2000	2000	2000	10000
<ul style="list-style-type: none"> Participate in the national, regional and international meetings, conferences and seminars that are pertinent to the control of illegal trade and poaching. 	3000	3000	3000	3000	3000	15000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<ul style="list-style-type: none"> Maintain records of incidents related to poaching, illegal trade, confiscation etc on tiger and other wildlife species 	2000	1000	1000	1000	2000	7000
<ul style="list-style-type: none"> Identify key customs for CITES enforcement 	3000	0	2000	0	2000	7000
<ul style="list-style-type: none"> Prepare a status report on the rights and duties of stakeholders who are directly or indirectly responsible for the protection of tigers in the wild. 	2000	0	2000	0	1000	5000
<ul style="list-style-type: none"> Conduct coordination meetings to review on the status of tigers in the wild as well as on the issues of poaching of tigers and smuggling tiger body parts. 	2000	0	2000	0	2000	6000
<ul style="list-style-type: none"> Conduct feasibility survey for the need to have cooperative agreements between enforcement agencies and transport companies (air, rail, bus, freight, express courier) 	1000	1000	1000	1000	1000	5000
<ul style="list-style-type: none"> Organize awareness interactions with the transport media on the illegal trade issue. 	1000	1000	1000	1000	1000	5000
<ul style="list-style-type: none"> Review the current strengths of the anti-poaching capacity of the protected areas such as human resources (number of scouts, guard posts and the protection unit); physical facilities (field gear, vehicles, elephants, communication systems, 						

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
reporting systems); intelligence network (reporting, database on poachers and smugglers, coordination with the authorities of forest, police, custom, postal service etc.); and financial aspects (government budget, incentives, rewards, emergency fund, conservation fee) and others	2000	0	2000	0	3000	7000
<ul style="list-style-type: none"> Conduct regular training programs for the antipoaching units on techniques of intelligence works, use of equipment and other relevant fields. 	3000	4000	4000	5000	5000	21000
<ul style="list-style-type: none"> Equip the antipoaching units with the field gear and basic equipment (binoculars, communication sets, GPS, kitchen sets etc) 	1000	5000	5000	5000	5000	21000
<ul style="list-style-type: none"> Procure physical resources to enhance antipoaching activities, such as four wheel drive vehicle, raft, motorboat, elephant, motorcycle, bicycles etc. 	2000	5000	5000	5000	5000	22000
<ul style="list-style-type: none"> Train DNPWC professional staff to take responsibility as a tiger authority 	5000	0	5000	0	5000	15000
<ul style="list-style-type: none"> Conduct a series of training workshops for the key individuals and/ or civil servants-such as cus-toms officials, postal workers, police, etc. regarding threats to tigers, illegal trade, and the identification of tiger parts. 	3000	4000	4000	5000	6000	22000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<ul style="list-style-type: none"> Study on the feasibility of mobilizing buffer zone community based organizations including youth groups in antipoaching operations 	2000	2000	2000	2000	1000	9000
<ul style="list-style-type: none"> Prepare case studies on the arrested poachers and smugglers to find out the socio-economic and psychological factors and alternatives to the wildlife crimes (such as poverty, unemployment, temptation, compellation etc.) 	2000	2000	2000	2000	1000	9000
4.2 Strengthen antipoaching efforts	28000	17000	17000	14000	15000	91000
<ul style="list-style-type: none"> Prepare antipoaching operation plans at the tiger conservation landscape level 	2000	0	2000	0	3000	7000
<ul style="list-style-type: none"> Review the existing management plans for the protected areas including buffer zones from the perspective of tiger conservation 	2000	2000	1000	0	0	5000
<ul style="list-style-type: none"> Conduct orientation training programs for the protection unit deployed in the protected areas. 	3000	3000	4000	5000	6000	21000
<ul style="list-style-type: none"> Review the post-conflict scenario for tiger conservation 	5000	0	0	0	0	5000
<ul style="list-style-type: none"> Prepare guidelines on reporting, valuation and authentication of the tiger related incidents for direct compensation to the affected people 	2000	2000	1000	0	0	5000
<ul style="list-style-type: none"> Establish a network of candid informers that 						

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
will eventually lead to arrest poachers and smugglers who handle tiger body parts.	3000	3000	3000	3000	3000	15000
<ul style="list-style-type: none"> Review the existing NPWC Act in respect to the changing national and international perspectives so that criminals and potential criminals will be grossly discouraged. 	0	2000	0	0	0	2000
<ul style="list-style-type: none"> Organize interaction meetings with the civil societies to discuss on enhancing political commitment in combating poaching and illegal trade. 	1000	0	1000	0	1000	3000
<ul style="list-style-type: none"> Conduct advocacy and lobbying activities during strategic events (wildlife week, environment day, biodiversity day, regular campaigns) at a high political level as a means of awareness to garner political will to address tiger conservation, poaching and illegal trade. 	2000	2000	2000	2000	2000	10000
<ul style="list-style-type: none"> Conduct feasibility survey of establishing a sustainable mechanism of providing appropriate incentives for the informers 	3000	0	0	0	0	3000
<ul style="list-style-type: none"> Organize interaction meetings at the community level to finalize on the mechanism of incentives 	3000	0	0	0	0	3000
<ul style="list-style-type: none"> Establish an endowment fund for incentives 	2000	3000	3000	4000	0	12000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
4.3 Enhance public awareness programs	9000	11000	12000	6000	6000	44000
<ul style="list-style-type: none"> Conduct nature conservation workshops and seminars, to provide basic knowledge; in-crease awareness-for game scouts, forest guards, rangers, and officers of their role in tiger and biodiversity conser-vation. 	2000	2000	2000	2000	2000	10000
<ul style="list-style-type: none"> Bring out public notice on the importance of tigers, and legal fines against the tiger related offenses in the bufferzones and potential areas of illegal trades 	1000	0	1000	0	1000	3000
<ul style="list-style-type: none"> Incorporate tiger conservation information and fines against tiger related offenses in the school level textbooks in the buffer zones 	1000	1000	1000	1000	0	4000
<ul style="list-style-type: none"> Install kiosks on the importance of tigers, and legal fines against the tiger related offenses at the major tourist arrival-departure locations such as airports, visitors information centers, immigration offices, protected areas entry fee collection centers etc. 	3000	6000	6000	1000	0	16000
<ul style="list-style-type: none"> Design, produce and distribute educational materials (posters, booklets, websites) based on the scientific background of tigers (ecological importance, balance in nature etc), cultural values (Bagh Bhairav, Namo Buddha, Dasain festival etc), and messages of social leaders and celebrities 	2000	2000	2000	2000	3000	11000

Line Items Detail Budget Breakdown for Objective 5 Transboundary Cooperation

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
2.2.5 Objective 5. Transboundary Cooperation	15000	22000	15000	0	14000	0	66000
5.1 Strengthen transboundary cooperation	3000	6000	2000	0	8000	0	19000
<ul style="list-style-type: none"> Prepare guidelines for holding transboundary meetings at the field levels. This will include identification of issues, alternatives solutions, commitments on the part of Nepal. 	1000	1000	0	0	0	0	2000
<ul style="list-style-type: none"> Exchange annual reports, newsletters and other relevant documents between the field level authorities 	0	0	0	0	5000	0	5000
<ul style="list-style-type: none"> Organize an international symposium on tiger will be convened in Nepal in second half of April 2007 	2000	5000	2000	0	3000	0	12000
5.2 Maintain ecological integrity	7000	8000	11000	0	4000	0	30000
<ul style="list-style-type: none"> Develop regional strategies for monitoring illegal wildlife trade along the borders with India and China. 	2000	2000	3000	0	1000	0	8000
<ul style="list-style-type: none"> Organize regional media tours on tiger conservation 	1000	2000	5000	0	1000	0	9000
<ul style="list-style-type: none"> Prepare protocol for joint research activities on the transient wildlife species that frequently cross the international borders. 	2000	2000	1000	0	1000	0	6000
<ul style="list-style-type: none"> Organize interaction meetings with the South Asian Association for Regional Cooperation (SAARC) secretariat to explore the possibility of using 							

Activities (Amount in US Dollars)	Remuneration	HRD	Travel	Equipment	ORC	Construction	Total
SAARC as a forum for wildlife conservation, antipoaching and control of illegal trade in wildlife	2000	2000	2000	0	1000	0	7000
5.3 Promote tiger tourism	5000	8000	2000	0	2000	0	17000
• Review tourism plans from the perspectives of tiger tourism	1000	1000	0	0	0	0	2000
• Train the local guides on tiger tracking and monitoring who will also be accompanying with the visitors as appropriate	2000	5000	1000	0	1000	0	9000
• Prepare a marketing strategy for tiger tourism in the tiger landscapes (e.g. Adopt a tiger scheme).	2000	2000	1000	0	1000	0	6000

Yearly Detail Budget Breakdown for Objective 5 Transboundary Cooperation

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
2.2.5 Objective 5. Transboundary Cooperation	20000	18000	9000	11000	8000	66000
5.1 Strengthen transboundary cooperation	12000	3000	2000	1000	1000	19000
• Prepare guidelines for holding transboundary meetings at the field levels. This will include identification of issues, alternatives solutions, commitments on the part of Nepal.	1000	0	1000	0	0	2000
• Exchange annual reports, newsletters and other relevant documents between the field level authorities	1000	1000	1000	1000	1000	5000
• Organize an international symposium on tiger will be convened in Nepal in second half of April 2007	10000	2000	0	0	0	12000
5.2 Maintain ecological integrity	5000	7000	5000	8000	5000	30000
• Develop regional strategies for monitoring illegal wildlife trade along the borders with India and China.	0	4000	0	4000	0	8000
• Organize regional media tours on tiger conservation	3000	0	3000	0	3000	9000
• Prepare protocol for joint research activities on the transient wildlife species that frequently cross the international borders.	2000	0	2000	0	2000	6000
• Organize interaction meetings with the South Asian Association for Regional Cooperation (SAARC) secretariat to explore the possibility of using SAARC as a forum for wildlife conservation, anti-poaching and control of illegal trade in wildlife	0	3000	0	4000	0	7000

Activities (Amount in US Dollars)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
5.3 Promote tiger tourism	3000	8000	2000	2000	2000	17000
• Review tourism plans from the perspectives of tiger tourism	2000	0	0	0	0	2000
• Train the local guides on tiger tracking and monitoring who will also be accompanying with the visitors as appropriate	1000	2000	2000	2000	2000	9000
• Prepare a marketing strategy for tiger tourism in the tiger landscapes (e.g. Adopt a tiger scheme).	0	6000	0	0	0	6000

Plan prepared with the support from
WWF Nepal

