



**Perception of Local People and Concerned Authority Regarding
Poaching of Wild Animals**

(A case study of Chitwan National Park)

**A Dissertation Submitted for the Partial Fulfillment of
Masters Degree in Environmental Science**

**Submitted to
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Tribhuvan University
Kirtipur, Kathmandu
Nepal**

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LETTER OF RECOMMENDATION

This is to certify that **Mr. Prabhakar Guragain** has prepared this Dissertation entitled **“Perception of Local People and Concerned Authority Regarding Poaching of Wild Animals”** for partial fulfillment of the requirements for the completion of Master’s Degree in Environmental Science (Wildlife Management) under my supervision and guidance.

This Dissertation bears the candidate’s own work, and has not submitted for other Academic purposes. I, therefore, recommend this work for approval and acceptance.

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I, **Prabhakar Guragain**, hereby declare that the research work entitled "**Perception of Local People and Concerned Authority Regarding Poaching of Wild Animals (A case study of Chitwan National Park)**" is my original work under the supervision of Shiva Raj Bhatta, submitted for the partial fulfillment of Master's Degree in Environmental Science, Tribhuvan University. This research has not been submitted for any other degrees or published anywhere. All the authors and contributors for the successful completion of this research are given due acknowledgement and cited in the reference list.

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Prabhakar Guragain

March, 2011

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Abstract

This study entitled “**Perception of Local People and Concerned Authority Regarding Poaching of Wild Animals** (A case study of Chitwan National Park)” was conducted from December 2008 to March of 2010 with the broad objective to know the anti poaching activity that is prevailing in this park and its efficiency. The specific objective of this study were to know local peoples, park managers’ perception regarding poaching of wild animals, to prepare the documentation of the poaching hotspots in CNP, to analyze the gap in the process of antipoaching operation and to recommend the park for its effective antipoaching strategy.

Data were collected from both primary and secondary sources. For primary data collection, questionnaire survey was conducted with local people of BZ, UGs members as well as group and individual discussion was done with park concerned authority. Informal interview was also done with local peoples, members of buffer zone and members of NGOs and INGOs working in these areas. Microsoft excel 2007 was used for the data analysis.

Chitwan National Park was found to be renowned for its unique diversity of flora and fauna and its outstanding natural beauty. But poaching was found to be its one of the biggest problem. Animals poaching were mainly due to deterioration of laws and the situation caused by the insurgency in Nepal. So this study was proposed in order to know the cause of poaching activities, resolving and identifying the trade roots, to know the weep holes in the biodiversity conservation and to contribute for suitable biodiversity conservation.

Data collected from the local people’s shows that the poaching problem was mainly due to high market value, lack of awareness, unemployment as well as other minor causes. Also most of them recommend for the improvement of prevailing security system and management of the park. They also told that the park and its APU units are mainly responsible for combating poaching problem along with the assistance from the local peoples.

Data collected from the park's concerned authority shows the prime location for the poaching were as khagendramalli, Bangara, Devital ,Island area, Sunachori,Madi, Churia hills etc. Poaching was done generally on the group of 1-5 peoples. Concerned authorities also focused on the improvement of the present laws and the working modality. They also wishes to have further technical support from NTNC, financial from WWF, administrative work from Nepal police as well as other administrative work from other offices and customs.

Poachers were mainly found to use pitfall trapping, poison, spears, snares, firearms etc for the poaching activities. The main problems of antipoaching were as low manpower, geographical landscape, and lack of resources, climate and the local assistance. Information gathering, patrolling, reward and punishment system, awareness programme were found to be some of the methods of antipoaching operation. Nepal Army was also found to be one of the main role playing organs in antipoaching activities of CNP.

For sustainability of the antipoaching programme, it is recommended to review and strengthening of security measures in all areas to minimize assess of poachers. APU members should be provided with necessary trainings. Reasonable remuneration and adequate security measure should be provided to BZ peoples and antipoaching unit members. With adequate provision of enough manpower, additional guard posts should be created within the short geographical distance. A public awareness Campion is required to educate the public giving them knowledge about wildlife facts, data and harmful effect of buying wildlife products. The rewards and punishment system should be publicized so that the local public will be aware of the rewards for the information leading to the capture of poachers and minimizing the poaching incident in the park.

Key words: anti-poaching, CNP, Biodiversity, laws, buffer zone

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ACRONYMS AND ABBREVIATIONS

APO	Anti Poaching Operation
APU	Anti Poaching Unit
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
BZMC	Buffer Zone Management Committee
BZMR	Buffer Zone Management Regulation
BZUC	Buffer Zone User Committee
CA	Conservation Area
CBO	Community Based Organization
CDO	Chief District Officer
CITIES	Convention of International Trade in Endangered Species of Wild Flora and Fauna
CNP	Chitwan National Park
CW	Chief Warden
DFO	District Forest Officer
DFO	District Forest Officer
DNPWC	Department of National Park and Wildlife Conservation
DoF	Department of Forest
EIA	Environmental Impact Assessment

ICIMOD	International Center for Integrated Mountain Development
IEE	Initial Environmental Examination
INGOs	International Non Governmental Organization
ITNC	International Trust for Nature Conservation
IUCN	International Union for Nature Conservation
NA	National Park
NBS	National Biodiversity Strategy
NGO	Non Governmental Organization
NP	National Park
NPWC act	National park and Wildlife conservation act
NPWCR	National park and Wildlife conservation Regulation
NTNC	National Trust for Nature Conservation
PA	Protected Areas
TAL	Terai Arc Landscape
TRAFFIC	Trade Record Analysis of Flora and Fauna in Commerce
VDC	Village Development Committee
WR	Wildlife Reserve
WWF	World Wildlife Fund

Chapter 1

Introduction

1.2 Background

1.1.1 Introduction of poaching problem:

The poaching and illegal trade of wild plants, wildlife and their derivatives is a world wide phenomena continuing on an enormous scale. The world is presently witnessing the existence of plant and animal species that have existed since the age of dinosaur. Majority of these modern extinctions are directly related to the modern activities. Among these are grown in human population, increases in the use and misuse of land and resources for different purpose, the expansion in the trade of wild plants and animal and the poaching of wildlife. (Aryal, 1995)

As Nepal has diverse climate which is attributed to the drastic change in elevation within a small area, the habitat of Nepal supports a variety of ecosystem that are globally scarce. Nepal's biodiversity supports over 6500 species of flowering plants with 700 species known to posse medical properties. There are over 1500 fungi species and over 350 species of lichens in term of fauna diversity, there are more than 175 Mammals species, 836 birds species 147 reptiles and amphibian species, 180 species of fish, 640 species of butterfly and over 600 species of moth (Maskey, 2001).

Despite of its biological richness and natural beauty, Nepal faces some of the most serious conservation threats of any nation of the work today (Aryal, 1995). The poaching of wildlife started long before the enforcement of the 1973 National Park and Wildlife Conservation Act and has always remained a serious problem throughout Nepal including all of the protected area. As the excess poaching of wild animal continued, the survival of endangered species like one horned rhino and tigers has been threatened (Maskey, 1998)

It is believed that the rhinoceros horn holds aphrodisiac qualities, and all the tiger body parts, ranging from whiskers to bones, are rich in medical properties which can heal anything from manic depression to impotence (Chungyalpa, 1998). Besides the poaching of large mammal, fish poisoning has become a serious threat to the survival of the aquatic fauna. In addition the illegal harvesting of asparagus and other wild plants for medical

use is quite common in the western part of Chitwan National Park. It is believed that feeding the boiled and dried asparagus root to the cow or buffaloes yield more milk (Chungyalpa, 1998).

1.1.2 Historical background of poaching

1.1.2.1 Chitwan valley:

Rana family ruled the country for 104 years and gave more importance to protect the forest of the Chitwan valley because this valley was famous for big game hunting for the ruling classes and their guest from Europe and the princely state of India. Record show a single hunting party killing 120 tigers, 38 rhinoceros, 27 leopards and 15 bears in the valley in 1938-39 (DNPWC report 1999).

When the Rana regime collapsed in 1950, the new government opened up the Chitwan valley for settlement. In 1954, Government introduced malaria eradication and agricultural development program in the valley with the financial support of United State Agency for International Development. This program attracted too many people from the hills. According to an estimate made by USAID, the population rose between 36000 to 100000 from 1950 to 1960 respectively. Till 1970 the settlers cleared about 70% forest of the valley forever. Poaching was rampant. The settlers poisoned the tigers to save domestic animal. And the Indian and Nepali poachers shot rhino illegally to trade horn and hoofs for more than a decade. The population of rhino declined drastically. In 1968 it is estimated that around 100 rhinos remained in the valley. Wild buffalos and swamp deer have been extinct from the valley during 1960's (Gurung, 1983).

The new settlers not only caused habitat lost and poached animals but also transferred foot and mouth disease to ungulate through their domestic animals that killed more than 100 Indian bison in the valley. The tiger's population was also affected by habitat loss, destruction, and disturbance and poisoning. Government realizes the fact that if wildlife poaching and habitat loss continue the entire animal would vanished from the valley within two decades. So in 1970 a field office of the CNP was established at Kasara where park headquarter is located today. The park was officially gazetted in 1973, as the first National Park of Nepal (DNPWC, 2001).

1.1.2.2 Poaching activities:

Despite the successful control of poaching during the early stages, the limited authority and jurisdiction of NA, combined with the removal of the gaidagasti patrolling system outside the protected areas, caused an increase in the poaching of wildlife in the kingdom of Nepal. From 1973-1998, poaching increased by 26.9% (79 of the total rhino death out of count of 295). Poaching reached its height in 1992, which was the worst year for rhino poaching in Nepal for over 25 years ; 17 rhino were killed illegally in CNP and one that had wandered outside the park was also killed (Martin, 2001; Martin and Vigne, 1995).

This static was dramatically reduced in the following years. In 1994 only one rhino was poached inside CNP and in 1995, not a single rhino was poached. However in 1996 and 1997, one rhino was poached each year inside CNP. In 1998, the poached activities increased to 4 rhino in CNP and one outside the park.

1.2 Objectives of the study purpose:

1.2.1 Broad Objective:

The broad objective of the study is to know the anti poaching activity that is prevailing in the park and its efficiency.

1.2.2 Specific objective:

The specific objectives are as follow:

- To understand local peoples, park managers' perception regarding poaching of wild animals.
- To prepare the documentation of the poaching hotspots in CNP
- To analyze the gap in the process of antipoaching operation
- To recommend the park for its effective antipoaching strategy

1.3 Limitation of the study:

1.3.1 Major limitation:

- The study covered only the BZUC and the park staffs and their respondents.
- The research study could not collect the more data from the Indian border site and depends on the limited primary and the secondary (records of the buffer zone committee) while gauging some parameters.

1.3.2 Social and the legal obstruction:

- Agricultural and the household works obstructed to some extent, because the research was conducted just before the paddy cultivation as during that time people were busy to sow the seeds.
- Poaching and the illegal trade are taken as the crime so nobody wants to come in front to speak openly. It was difficult to conduct interviews with the arrested poachers and timber smugglers as they don't reveal the truth.

1.4 Description of the Study Area:

1.4.1 Chitwan National Park's introduction:

Chitwan National Park was developed in 1973 as the first NP of Nepal which is world renowned for its unique diversity of flora and fauna and outstanding natural beauty. UNESCO designated it as a world heritage site 1984 A.D due to its outstanding natural features under the world heritage conservation recognizing its unique biological resources (DNPWC, 2005).

It has outstanding biological richness with 8 ecosystem including 7 forest types, 6 grassland types, 5 wetland and 3 main river system habitats. The faunal diversity consist of 50 species of mammal, 526 species of birds, 49 species of reptiles and amphibians and 120 species of fish. The floral diversity of the park consist of more than 600 plants species which include 3 gymnosperm, 13 pteridophytes, 415 dicotyledons, 137 monocots and 16 species of orchid. CNP is one of the last habitats of many endangered wild animals, especially the Asian elephants, Asian one horned rhinoceros, Bengal tiger, gaur, gangetic Dolphin, Giant Hornbill, Bengal Florican and Gharial. The park also harbors the

rare tree fern, cycas, screw pine and many others (DNPWC, Chitwan National Park and Buffer zone Management Plan, 2001-2005).



Fig1.1 Map of CNP and its Buffer Zone

1.5 Rationale of the Study:

Poaching of endangered species and illegal trade in their product poses serious challenge to protected area manager and conservationist. Despite of a heavy penalty of 15 years in jail or a fine of NRs 1,00,000 or both for killing endangered species or dealing in their body parts, poaching and illegal trade in wildlife product continue to be the challenge for the park managers and conservationist (Chungyalpa, 1998).

The political instability in 1950s ensued widespread poaching of wildlife such as rhinoceros and tigers. The situation was very alarming putting the survival of many wildlife species at risk. Swamp deer and wild buffalo disappeared from the Chitwan in 1960s. (DNPWC, 2005)

Rhino mortality in the fiscal year 2063\64 reached 19 individuals (16 in Chitwan and 2 in Suklaphata) out of which nine were kill by poachers using the different types of techniques such as gunshot, poisoning and electrocution. Out of the nine individual rhino that were killed by poachers, poachers have taken away eight horns and all the hooves from the two rhinos. (DNPWC, 2006-2007)

The rhino poaching was largely due to the deterioration of laws and order situation caused by the insurgency in the country. Poaching activities is one of the root causes of hindrance in biodiversity conservation, which needs to be address in terms of spatial and temporal variation. Hence, the present study is proposed in order to know the cause of poaching activities, resolving and identifying the trade root, to find out the weep holes in the biodiversity conservation and to contribute for sustainable biodiversity conservation. This study will also help anti poaching unit (APU) of CNP for reducing the poaching activities for sustainable biodiversity conservation.

Chapter 2

Literature Review

Poaching is the illegal hunting, killing or capturing of animals. Poaching refers to the failure to comply with regulation for legal harvest, resulting in the illegal taking of wildlife that would otherwise be allowable. Most countries enforce various sanctions on the hunting of wild animal and International controls, such as bans, restriction and monitoring trade are all aimed at controlling poaching.

Poaching is a great threat to bio-diversity conservation Nepal. Poaching of rare and endangered animals are because of the value of their bones, skins, and other derivatives. Occasionally poaching is primarily for the animal bi-product used in the ethnic medicines. This has been threat from time to time. Control of poaching outside protected areas is difficult. (Maskey, 1995)

Different wildlife animals have poached for different uses and in different areas. Mostly, poachers are inhabitant of local villages and who are familiar for the area. Very often middlemen lure subsistence local residents to pull the trigger. There are different hotspots and traders routs for transportation of materials. Generally poor and ethnic groups are engaging in poaching activities for their livelihoods. There has been increasing threat to biological diversity due to surrounding human pressure (Chaudhary, 1998).

In Nepal poaching of wild animals started long before the enforcement of national parks and conservation act 1973 and has remained the serious problems through out Nepal, including all of the protected areas. Poaching is severe in the national parks in the Terai region. Poachers take anything that comes their way from deer and wild boar to endangered one-horned rhino (ENS, 1998). Besides the poaching of large mammals; fish poisoning has become a serious threat to the survival of the aquatic fauna (Maskey, 1998)

The trade in wildlife implies the export, re-export and import of both live wild animals and plants/or its parts. Export of exotic birds or import of idols made from ivory, are examples of wildlife trade. The wildlife trade has become an international industry, much of it supported by illegal capture or killing of animals. Frequently, illegal goods are mixed with the legal shipments. "In the US alone, the US fish and wildlife service has estimated that for every 10 wildlife shipments entering the country legally, one to four enter undeclared and undetected." (www.greenaction.com)

In Nepal poaching of wild animals started long before the enforcement of national parks and conservation act 1973 and has remained the serious problems through out Nepal, including all of the protected areas. Poaching is severe in the national parks in the Terai region. Poachers take anything that comes their way from deer and wild boar to endangered one-horned rhino (ENS, 1998). Besides the poaching of large mammals; fish poisoning has become a serious threat to the survival of the aquatic fauna. (Maskey, 1998)

Illegal grazing, fuel wood collection, timber collection, timber theft, grass and fodder cutting, over fishing, non-wood forest products collection and boundary encroachment are obvious along the park edge. (Rayamaghi, 2001)

If the scale of legal operations indicates the potential scale of an illegal trade, the implications here are alarming. Complex methods of handling and transport are involved in the illegal timber trade. Because of the specialized capacity needed to handle and process the material, few organizations are capable of exploiting illegal opportunities for trade. Poor regulation and difficulties in identifying sawn timber and other processed products ensure that little hard evidence is available to demonstrate the extent of the trade, but the estimated profits from illegal timber are immense. (Baral and Heinen, 2006)

The illegal trade is directly correlated with demographic factors, potentials for profit, and lack of adequate resources for law enforcement. Reports of illegal hunting from some parts of Nepal are common. Poaching of wildlife and illegal collection of rare, threatened and endangered plant species has always been a serious problem in and outside protected areas in Nepal (DNPWC, 2005).

Sharp rise in the number of rhinos poached during the years of the Maoist insurgency in the country, compared to the years before. Furthermore, the availability of local economic opportunities seemed to reduce the level of poaching significantly. However, the penalties imposed on the convicted poachers were found to have little or no effect on the level of rhino poaching in the CNP. Anti-poaching units, in their original organizational and operational form were highly successful in controlling the level of poaching in the CNP. (Poudel, 2002)

Besides wild animals, illegal and unscientific collection of medicinal and aromatic plant species is quite common mostly in the mountain region. (Olsen and Larsen, 2003)

The illegal wildlife trade comprises a wide range of illicit activities of varying scales of operation and with differing levels of seriousness (Cook and Roberts, 2002). Despite strict legislation ensuring a poacher/trader 15 years imprisonment or a fine of up to USD 1300 or both, trade has continued to flourish (chungyalpa, 1998). 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. (WWF, 2003)

Nepal's effort to curb these activities by creating anti-poaching units developing a generous reward system to informants and launching awareness programs have shown to be effective. Unfortunately, these efforts will not be able to withstand the illegal market forces if international demand is not reduced (Sharma, 1995). Trend of poaching has been fluctuating last three decades in Nepal. Besides wild animals, illegal and unscientific medicinal and aromatic plant species is quite common mostly in the mountain region. (Olsen and Larsen, 2003)

Sharp rise in the number of rhinos poached during the years of the Maoist insurgency in the country, compared to the years before. Furthermore the availability of local economic opportunities seemed to reduce the level of poaching significantly. However the penalties imposed on the convicted poachers were found to have little or no effect on the level of rhino poaching in the Chitwan National Park. Anti poaching units in their original form were highly successful in controlling the level of poaching in the CNP. (Poudyal, 2005)

Poaching and illegal trade on wildlife is a subject that has received little attention in the kingdom of Nepal. The illegal trade of living animals and birds or of wildlife part may be a major source of income for many low and high-income families. Control of illegal trade in plant and animals species their parts or products is a worldwide concern these days. (www.traffic.org, dated 5th February 2009)

Poaching and Illegal trade on wildlife is a subject that has received little attention in the kingdom of Nepal. The illegal trade of live animal and birds, or of wildlife parts, may be a major source of income for many low and high-income families. Control of illegal trade in plant and animal species, their parts or products, is a world-wide concern these days. The illegal trade is directly correlated with demographic factors, potentials for profit, and lack of adequate resources for law enforcement. (www.traffic.org)

Each year hundred of millions of plants and animals are caught or harvested from the wild and then sold as food, pets, ornamental plants, tourist curios and medicine, while a great deal of this trade is legal and is not harming wild population, a worryingly large proportion is illegal and threatens the survival of many endangered species(WWF,2009)

In the global context's,

The characteristic feature of the studies on the poaching problem have been their focus on the law enforcement, penalties and the international trade of valuable wildlife parts such as rhino horns and tusks. There have been a number of studies of illegal exploitation of African rhinos and elephant, most notably those in the Luagcoa valley, Zambia by leader-Willians et.al (1990).This study is focused on the relationship between illegal exploitation and anti-poaching law enforcement. The study by Leader-Williams et al (1990) concluded that the declines in rhino numbers resulted from problems originating outside the protected areas such as the increasing price of rhino horn in the international market and a decline in other economic opportunities for local people living in and around the protected areas. The international ivory trade has also been blamed for the decline in the African elephant population (Pilgram and Western 1986)

Leader-Williams (1993) modeled the local poachers and dealers in the Luangwa valley Zambia. They showed that a penalty that varies with the output of poachers is more effective than a fixed penalty. Furthermore they found that local poachers could be

deferred from poaching activities through local investment schemes that increased alternative economic opportunities. However in the NP like CNP in Nepal, the resources controller is obviously the park authority who is in charge of managing the parks. There are important distinctions between the dealer and the park authorities as resource controller.

First the dealer's action is illegal and thus liable to penalty, which must be considered in modeling their net-return from poaching. Unlike dealers, park authorities bear an extra cost of law enforcement. More importantly in the context of CNP the resources controller does not maximize net benefit by harvesting rhino, as the national park economic benefits comes mainly from tourism. It is more recent study on elephant poaching, also in Luangwa valley, looked at resources allocated to the enforcement in terms of man power, budget, rewards etc. The study concludes that the success in elephant conservation is due to the increased level of enforcement through the introduction of specific investigation operations, and the bonus system (Machlis, 1995)

Chapter 3

Methods and Methodology

3.1 Research Design:

The research design was mainly based on the social survey in the buffer zone of CNP. Factors related to increase the poaching and the illegal trade were identified by the discussion with the various related personnel. For the questionnaire survey and group discussion, direct field visit was made to all the BZUC of CNP. Local people of the User Groups (UGs) and officials of CNP were consulted to facilitate the research work. Different methods like questionnaire survey, Focus Group Discussion (FGD), interviews, and informal talk's i.e. personal conversation were adopted to obtain the primary and various secondary data were also reviewed to gather information supporting the primary data. For primary data collection, 10 locals and buffer zone members of each UC were selected basis on their knowledge about the anti poaching operation and their role of the buffer zone management committee.

3.2 Reconnaissance field visit:

Before starting the primary data collection, reconnaissance field visit was conducted on December 28, 2009 for one week to the buffer zone area of CNP to gather the some basic information to design the sample area and questionnaire survey.

3.3 Primary data collection:

3.3.1 Group Discussion:

The group discussion was done with the park's staffs and indirect discussion was done with the local resident to identify the causes of poaching and illegal trade. Group discussion was mainly done with park staffs to know the poaching hotspots and their procedure after arrest of suspect, existing laws and regulation and to know their expectation with various governmental and non governmental organs and the local peoples.

3.3.2 Key Informant Interview:

Different officials who were involved in the anti poaching were interviewed. Key informants here denotes the park officials, rangers, antipoaching units, staffs, senior game scouts, buffer zone management committee ,elephants staffs those people who are directly involved in the protection against the poachers and wild life trade and concerned knowledgeable people and from the literature as well.

3.3.3 Questionnaire survey:

Twenty-one out of Twenty-one of the BZUC of the study area were visited. The committee members were asked the questionnaire. At the same time bufferzone users' groups were also visited randomly that lies within the users committee.

The questionnaire contained the questions regarding their perception about the park management, the reason of poaching and its pattern, preferred techniques to control the poaching etc. The questionnaire form was distributed to most of the bufferzone user group members. The detail of the questionnaire has been given in the annexes.

3.4 Secondary data collection:

Secondary data was collected from the NTNC, WWF Nepal Program Office, DNPWC Babarmahal, CNP office, BCC, IUCN and other relevant offices and literatures cited. Secondary data were also generated from the variety of books, journals, published and unpublished reports from TUCL, WWF, NTNC, DNPWC, Resources Himalaya, CNP office and BZMC's offices.

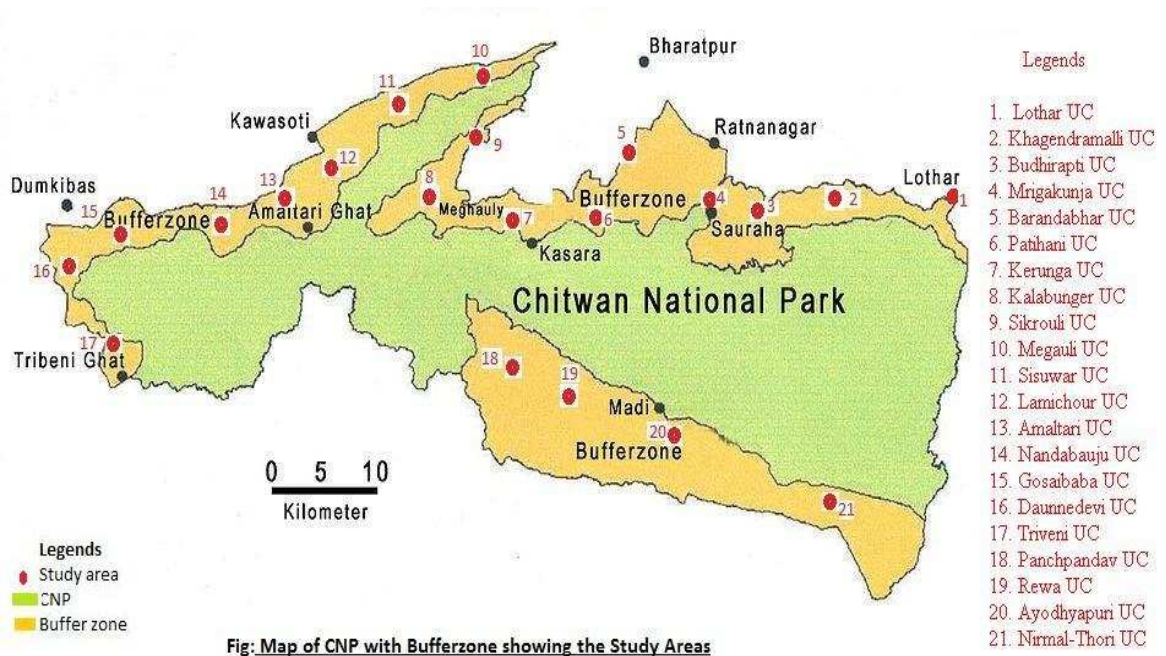
3.5 Data analysis:

Both quantitative as well as the qualitative data analysis techniques were used for the analysis of the gathered data. For the analysis of the quantitative data, percentage and mean were used. Similarly the quantitative data were analyzed using the descriptive method. The data are presented in tables, bar diagrams and the line chart. The programmes mainly used in the data analysis are the Microsoft excels 2007.

3.6 Research site:

3.6.1 Selection of the study area:

Bufferzone users group and committees of CNP were selected as peoples from the bufferzone area are directly in contact with reserve as well as the outsiders and the bufferzone act as the passage between the park and the outside influences. For this reason 21 of the BZMC has been visited so that the information collected would be representative of the all the area surrounding the park and the various of the buffer zone users group were also visited in those committees. Detail of the study area is shown below:



Chapter 4

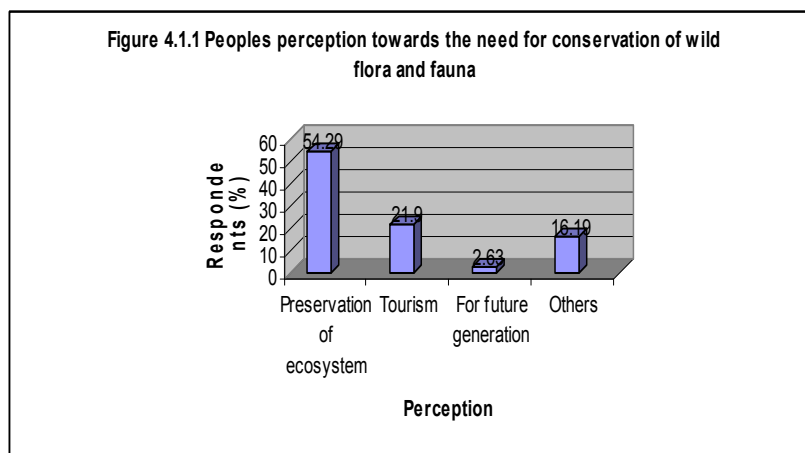
Result

Based on the field visit as well as from the primary and the secondary data collected from the local people, conservation staffs as well as from the identified poachers and victimized people, following result were observed.

4.1 Data collected from the local buffer zone villagers:

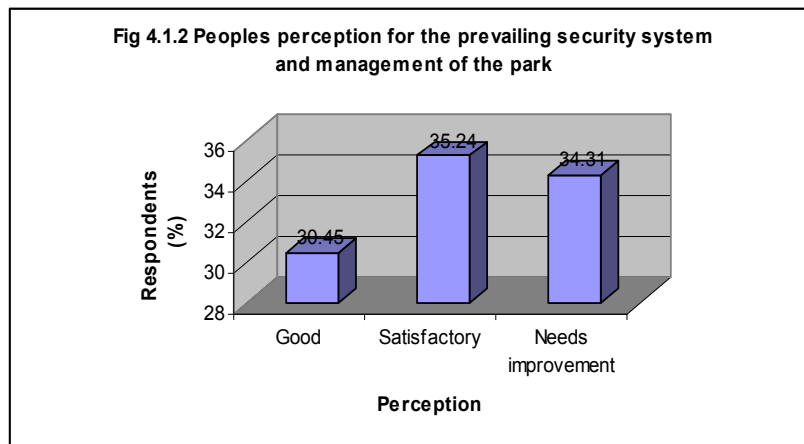
4.1.1 People's perception towards the need for conservation of wild habitat

During the field visit and in the direct and indirect meeting with the local buffer zone villagers and staffs, they had shown the good knowledge about the need and importance of wildlife. Out of these 210 respondents questioned, 114 (54.29%) said for the preservation of environment and ecosystem, 46(21.9%) told it was for the financial sector to the locals as well as for the country form the tourism industry. Similarly 6(2.62%) recommended it for the future generation and 34(16.19%) respondents recommended it for the other importance like for conservation of wild animals and plants, medicine, breeding to the domestic animal, scenic beauty etc.



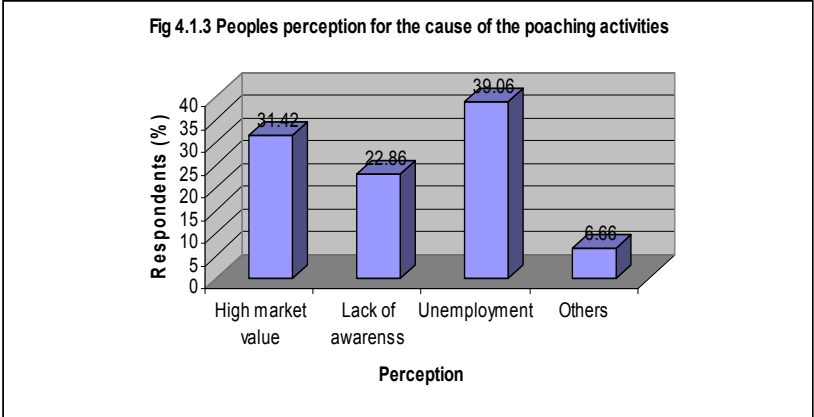
4.1.2 People perception for the prevailing security and management system of the park

Most of the local people had said that park was made for them and they are the main responsible person for the protection of the reserve and the sharing of the benefit from it. Out of these 210 respondent from all buffer zone areas, prevailing security system according to the 64(30.45%) respondent was good and 74(35.24%) said it as satisfactory . 72(34.31%) of them told as the security system needs the improvement. These respondents who told park security system was not satisfactory were found to be not satisfied with the park management system aspect such as provision for the compensation, fines and punishment, provision for community based forest programme as well as the provision for the use of park resources etc.



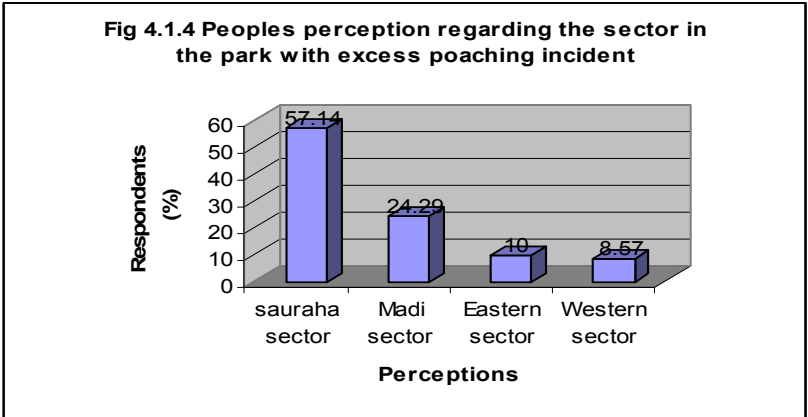
4.1.3 People's perception for the cause of the poaching activities

Poaching of wild animals from the park is common in and around the CNP. The local peoples were asked about cause of the increase in the poaching in CNP region. Out of the 210 respondent, 66(31.42%) said the region behind it as the high market value, 82(39.04%) said the root cause as the unemployment and poverty, 48(22.86%) said as the lack of awareness among the villagers and 14(6.68%) said as due to the retaliatory killing, corruption, lack of security which are included under the heading others.



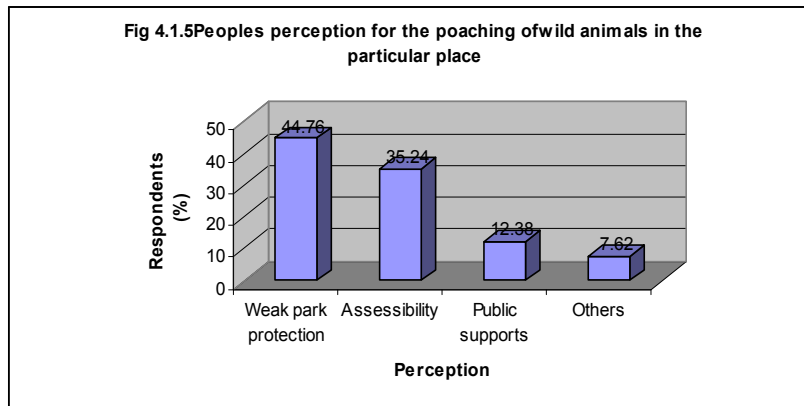
4.1.4 Peoples perception regarding the region with excess poaching incident

As the local people were found to be aware about the poaching incident, they were asked about the sector in which the poaching incident mostly takes place. Among these total of 210 respondent, 120(57.14%) of them told Sauraha sector as the prime location where poaching occurs frequently. 51 (24.29%) of them told as Madi sector, 21(10%) told as Eastern sector and remaining 18(8.57%) told as the Western sector. They point out the region in these areas for poaching as easy accessibility, far from the park’s post and also as the public support. It was found similar to the poaching data collected from the park office.



4.1.5 Peoples perception for the reason of poaching of wild animal in particular place

As the respondent had pointed out the poaching hotspot, they were asked about the reason of the poaching of the particular wild animal in the particular places. Out of the total of 210 respondents, 94(44.76%) pointed out the weak park protection as the main reason. 74(35.24%) viewed the reason as the accessibility and the poachers knows the area better, 26(12.38%) said the reason for the public support. 16(7.62%) said others like corruption of the internal staffs of CNP, political pressure etc.



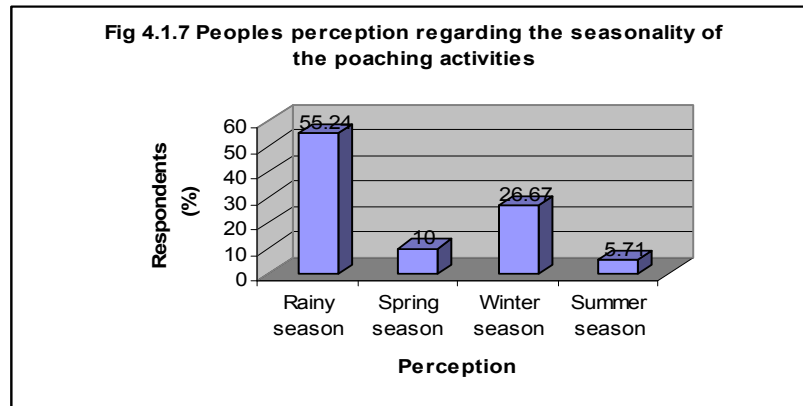
4.1.6 Peoples perception regarding the status of poachers economy

When the questionnaire was conducted with the local people about the status of shooting poacher's socio-economic status, most of them told as from the financially backward society. Out of the 210 respondents questioned about the socio-economic status of poachers, 157(74.76%) told poachers were from financially backward society (low class family), 46 (21.9%) told them as they from middle class family of ex-army and polices. Remaining 7 (3.33%) told them as from financially good record family (high class family) who does wildlife crime for entertainment, fun and money.

4.1.7 Peoples perception regarding the season of the poaching activity.

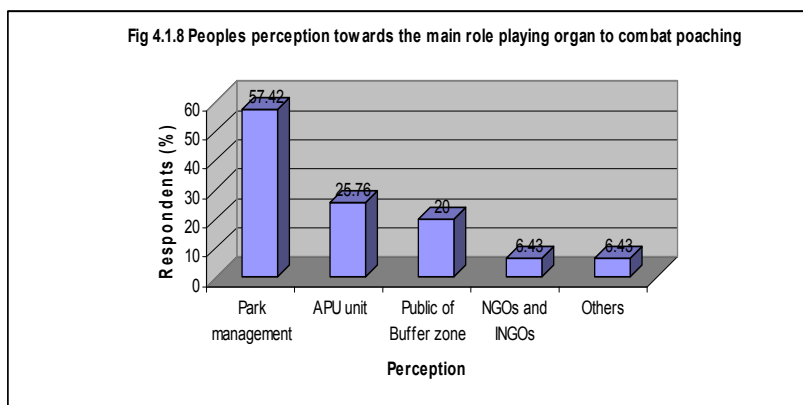
As the local people were found to have idea about the anti poaching activities, they were asked about the most prone season on which these poaching activities occurs. 116(55.24%) told it as in rainy season in which river are risen and presence of dense vegetation in the forest. 56(26.67%) told it to be on the winter season in which location of the incidence place would be hard for the APU due to the presence of dense of dense

fig. 21(10%) incident to be occurring on the spring season during festival time and remaining 12(5.71%) told it on the summer season.



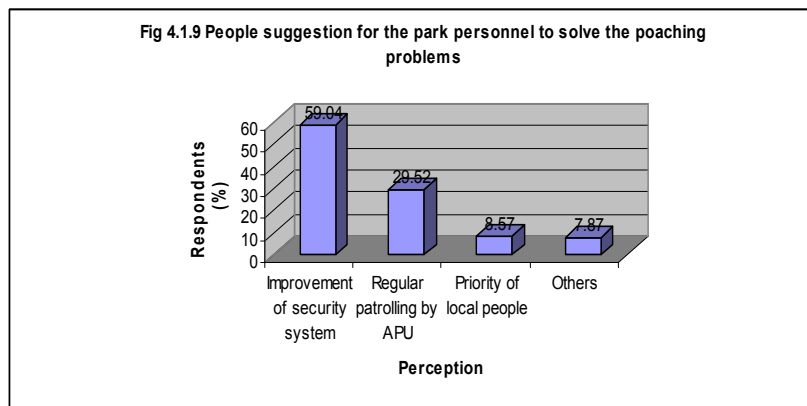
4.1.8 People’s perception towards the main role playing organ to combat poaching:

Peoples were found to be quite aware about the poaching incident and they also identified different organs that are playing main role antipoaching effort. According to them, 78(37.42%) told main organ to combat poaching as park management, 54(25.71%) told the main role of APU units so constructed, 42(20%) reported to be the public of buffer zone, 18(6.43%) of then reported the main role of NGO's an INGO's an 18(6.43%) reported as others as army, police, DFO etc.



4.1.9 People suggestion for the park personnel to solve the poaching problems:

Local people were found to have their good knowledge about the park's wild flora and fauna. They were found to be aware of the poaching problems and long term effect that may be faced in the future due to the poaching problems. Respondent were asked to give one main suggestion to the park personnel to solve the poaching problem. according to these 210 respondent questioned, 114(59.04%) of them wants the park personnel to improve the security system.62 (29.52%) of them said for the regular patrolling and field visit of APU units, 18(8.57%) of them reported to give priority to the local people and their group to solve the poaching problem and 6(2.87%) of them suggested to give priority to the local people.



4.2 Data collected from the Park's concerned authority

Park's concerned authority was found to have clear concept of wildlife conservation and issues and facts related to poaching incidents. They had the high spirit for the conservation of wild flora and fauna of the park. When the discussion was done, they had reported the several facts and issues related to the poaching incident. List of those Park concern authorities who were present in the group discussion are shown in Annex 4.

4.2.1 Poaching hotspot

The poaching incident had happened in any places of CNP. With respect to the particular animal, they had reported prime area of poaching mainly for the particular animals as,

Rhinos: Khagendramali, Amrite, Bangmara community forest Bandarjola Island, Devital,

Island area, Gaida khasa areas.

Tiger: - Sonachuri, Khagendra malli, Shauraha to Jarneli, Burandabhar, Bandarjola, Tribeni, Dumaria, Padampur, madi etc.

Bears: - Bharandabhar, Madi sector, Churia hills areas, Sauraha etc.

Deers and Wild boar: - In most of the buffer zone area (inside and outside the park).

4.2.2 Process after the arrest of suspected poachers:

When the poacher and suspected people are caught they were taken in the park's custody. A legal paper is made and was handed to them about their custody. Then the interrogation is made with them and the related information was noted. Legal advice is then taken from the governmental lawyers. As the Chief Warden posses the quasi judiciary power, suspected were made appeared in Chief Warden Office. Then legal process is charged to them, giving them opportunities to justify themselves. If they were found guilty, then they were sent to the district prison for their crime otherwise they were released.

4.2.3 Size of poaching group:

According to them, poaching is mainly done the group of 1-5 people in and around the park area. On the whole process (from shooter to international market) there is involvement of more than ten peoples responsible for the particular poaching.

4.2.4 Efficiency in present laws and improvement of working modality:

According to the park personnel views and ideas, there is the need of new plans and strategy for combating the poaching activities and proper implementation of the anti poaching activities. They said the improvement must be in the sector of laws, record system, and increase in trained man power in APU unit etc.

4.2.5 Expectation from the Partners:

There are several partners (local groups, NGOs and INGOs and governmental organizations) that had supported the park personnel in the antipoaching effort of CNP. They have expected mainly support from them in various works. The major partners and expectation from them by the park authority as discussed with these park personals are shown in Annex 4.

4.2.6 Gap analysis

During the discussion about the anti poaching effort and the procedure with the park personnel they pointed out different loop holes and difficulties. They pointed out different types of gaps which have hindered the effective anti poaching activities. During the discussion process, gap i.e. weeps holes for the anti poaching was categories mainly as institutional gaps and policy gaps. The summary of the gap analysis is shown annex 7.

Chapter 5

DISCUSSION

Dependency of local people on the park resource can be minimized only through alternative income generating activities. In the absence of the economic development opportunities and activities, majority of the people are not in the position to endure the cost of alternative energy installation and are still depending on the local forest for the timber, firewood as the main source of energy for the cooking and heating. Until the local people are ensured adequate food and shelter and a signified standard of living, all efforts to establish and manage national parks and the protected areas will be failure because in many cases biology can wait but the surrounding community cannot wait. (Pilgram and Western, 1986)

In the past, people immigrate to terai areas to reclaim fertile agricultural lands, access physical facilities and take refuge from environmental hardship. The maoist insurgency has further increased immigration (Baral and Heinen, 2006) as camps were established in the public forest to provide shelter to the displaced people. Increase in most of the poaching cases and land encroachment of during last 10 years for illegal establishment of cottage inside Chitwan buffer zone area might be due to immigration from the hilly region in maoist movement. Yonzon (2006) also reported that the maoist insurgency in Nepal has been considered a major factor affecting poaching in CNP in recent years.

TAL, NTNC were the agencies for building infrastructure and other alternative economic opportunities in buffer zone area of CNP. As reported by respondent, this factor also had a consistent negative and highly significant effect on the level of poaching in the CNP, indicating the importance of alternative economic opportunities in reducing the level of poaching in the CNP. This was especially important in deterring local poacher in the Chitwan valley from being involved in poaching as they are found to come from very poor and landless people (Gurung and Guragain, 2000). Furthermore, results from this analysis are consistent with the finding of Leader-William (1993) whose study focused on an African context. They report a reduced level of poaching by local poacher where community development activities were initiated and great numbers of jobs were

provided for the locals in the tourism sector. In the Nepalese context, Martin (2001) has suggested that the low level of poaching between the years 1994 and 1997 could be due to the community development projects initiated around the CNP during that period, as well as local employment from the tourism sector. (Martin, 2001)

Most of the respondents focused that poaching were mainly found in the monsoon season, holiday, and far from the army post and the range post. Currently poaching occurs during the election, public holiday, festival occasion and during the monsoon period. During the election time, most of the police and military are deputed to the election constituencies. During the public holiday, park staffs either stay at home or take rest in their offices. During the festive occasion, most of the park staff goes to home to celebrate the festival with their families and friend (Chungyalpa, 1998 and Maskey, 1998). Poachers' takes advantage of their absence as is evident from the DNPWC's official chart. During the monsoon many of the park area become inaccessible to patrol and poachers generally takes risk in this period. The intensity of the poaching activities also more at the night time as the park staff returns to their post and. At night, game scout are helpless as they do not have any equipments to protect themselves from the poachers. Poachers also intensify their activities during January to March when the flora inside the protected area falls short to feed the animals. In the winter, rhino venture into the farmland to satisfy their hunger where they are killed. During the cold winter, their movement can be studied easily in the jungle with less grown plants herbs. Poachers intensify their activities during the winter season (Chungyalpa, 1998 and Maskey, 1998). During the time of flooding; most of the animals are found to be injured. To these animals, poachers become easier to intensify their poaching activities. Where the areas are far from the army post and the park staffs, poachers might feel the area easier for the poaching activities.

Fire wood was found to be the major source of energy used in the study area. So people are dependent on the forest source. The consumption of the fire wood is higher because of the lack of alternative source of energy. The different source of the wood and fodder is NP, private land and community forest. This is one of the factors to cause poaching.

Chungyalpa, 1998 and Maskey, 1998 also reported the lack of resource in CNP was also the cause of ineffective antipoaching operation. While many NGOs/INGOs provide

support to antipoaching operation by paying for the field gear and vehicles maintenances still requires a lot of financial aids. While governmental budget covers the basic salary for the game scout, it does not cover the emergency operations that necessitate vehicles, long distance communication and local informants and this incentive really needs to be received. Many of the park staffs risk their life while they go for antipoaching operation but in turn they get low salary from the government and they receive little recognition for their work even they are not insurance for their work if they fall in any accident. That means sometimes the motivation level of the APU staff may get lowered.

At present study also found climate/weather was also the factor helping to cause poor antipoaching operations. During the monsoon season, the lakes and rivers rise considerably and prevent the accessibility to the other side. Fish poacher find it easy to escape during these months. The rain helps to obstruct the visibility and slow down all the operations. Flooding is also problem in CNP and its buffer zone areas that severely limits APU mobility. During the winter season fog up to late morning hinders' antipoaching operation as visibility even hinders the vehicles to move (WCN, 2008).

Similarly geographical landscape was also a problem in antipoaching operation in CNP. In many cases the park staff and Army staffs hears the sound of gunfire or detect smoke rising but find that the poachers have already made their gateway by the time they gets their. The park areas are sometimes so remote that the park staffs do not have easy access to them. Often the poachers are able to make their escape after being detected during the time period required by the park staff to get their. For controlling the poaching and illegal trade of wildlife, CNP is also lacking joint action among park army, custom police, intelligence network, NGOs and INGOs.

In many cases poachers were aided by themselves or locals who live in village adjoining to park area. It also give them close and hideout, reducing their chance of caught. From the respondent, it was known that poachers mostly sold the wild animals and their part usually to the local traders, and other consumes by themselves.

Respondents believed that punishment should be given to the poachers. Similarly, few of the respondents believed that awareness programme about wildlife and their importance could decrease the poaching problems. As reported from the study, political leaders also involved directly and indirectly in the poaching activities. From the respondents, it was

known that when the suspected poachers were to respond to the park management, they were left in pressure of the political leaders. It indicates that there might be inactive participation of politician and others.

Another important reason for the poaching in CNP was the international market value for the wild species and their parts. Most of the respondent believed that trade perspective of animals and their part was the cause of poaching. Chungyalpa (1998) reported that despite of the strict national and international legislation, rhino horns and tiger bones were as profitable business as the narcotic drugs in the international markets. The value of o horn in the international market would come to US \$ 30,000. On an average, a dealer receives approximately US \$ 20,000/kg of rhino horn and sometime as much as US \$ 10,000/kg of tiger bone. The actual poacher gets usually one percent of the final profit. (Chungyalpa, 1998). The tiger bone had medical value and is exported to China. The traditional medicine uses tiger bone and many other parts to heal anything from manic depression to impotence. Rhino horns have aphrodisiac qualities. In Middle Eastern countries, they have aesthetic as well as status value, where they are used to make handles of ceremonial draggers. They are also exported to US through Middle East. Because of the demand for the tiger bone and rhino horn on the international market, poaching is increasing every year. (Chungyalpa, 1998)

Although WWF, NTNC had made electric fence in some parts of CNP to control outside flow of animals but it had been districted by poachers and in some areas, the landslide in stream and river margins. Based on informal communication with the people of buffer zone, no current had flown from last one year in some part of CNP and BZUC. It may be due to the energy shortage in the country. This might increase the outflow of animals further. People use their local technique such as beating drums, lightening fire to scare wild animals and to drive them away from their farmland and settlement areas. These local technique sometime cause death of the wild animals (Gurung and Guragain, 2000)

In CNP, there is reported many causes of poaching. Most imported causes on local level are revenge, lack of awareness, lack of resources, unemployment, medical use, meat consumption. Gurung and Guragain (2000) also reported that political aspect as also one of the main cause of poaching in national park and wildlife reserve.

Most of the wounding cases and poaching cases found to be happened in buffer zone of CNP. Gurung and Guragain (2000) pointed out that community forest and the farms within the park buffer zone are the areas where the poaching occurs frequently. In recent years, due to the healthy rhino population within the CNP, more rhino are found to wander out into the community forest or farms (Dhakal, 2005), suggesting that it is relatively easy for the poacher to find the rhino. This lowers the search effort and hence the cost. On the other hand, poachers are found to target the areas with high rhino population concentration which of course leads to the lower cost in term of search efforts. (Gurung and Guragain, 2000)

An effective patrolling by the APU unit in CNP and strict law enforcement might help in reducing the poaching activity further. Leaders-Williams et al(1990), in their study on black rhino and elephant on the Luangwa Valley, Zambia found that an increased patrol effort had reduced illegal activities within the protected areas which in turn reduced the decline in rhino and elephant population.

Chitwan National Park respondents believes that the rules and regulation in punishing the poachers should be improved, i.e. poachers should be send to prison for the long time. Leader-William et al (1993) point out that if the prison sentence is less severe than the fine, then many poachers would simply choose prison instead, which increase the expense to the state and a less severe fine could encourage dealers and middleman to buy acquittal of the hunter they hired for poaching, as dealers and middlemen are usually not convicted themselves (Leader-William et. al 1993; Gurung and Guragain, 2000)

Tharu community in the CNP's buffer zone were reported to be highly substantive on wild vegetables and other food like ban tarul, pneuro, Singda. Similarly they were reported to take eggs of crocodiles, turtle's part and different plants as meat and medicine. Fishing being their traditional business they enter illegally to CNP. Other people also enter to the park area for collection of food and foddors illegal, due o scarcity of fuel wood and fodder in the buffer zone area. DNPWC (2003) noted that the traditional hunting and subsistence economy of certain ethnic groups (Tharu, Magar, Praja, Maghi) had also adversely affected the population of the wild animals in and around the protected areas in Nepal.

Poaching in the local level is essentially the economic phenomena and hence the availability of alternative economic opportunity locally plays an important role in determining the incentives for poaching. Due to lack of fuel wood, fodder in buffer zone area, the alternative energy to each household is necessary. If alternative pursuits offer a higher rate of returns, then the opportunity cost of poaching increases and the incentive to poach will decline. These programmes reduce the level of illegal activities (such as poaching) by increasing the opportunity cost of such activities (Leader-Williams et. al 1993)

5.1 Poaching and its cause:

The international trade of wildlife species is just as illegal and almost as profitable as the international narcotic trade. In fact the trafficking of wildlife species is known to be second only to the trafficking of the drugs. The value of rhino horn on the market would come up to us \$ 30,000 and an entire tiger skeleton is priceless. On average the dealers receive approximately us \$ 20,000/kg of rhino horn and sometimes as much as us \$ 10,000/kg of tiger bones. (Chungyalpa, 1998)

The majority of wildlife species on the endangered list have been put there due to mankind's self interest and on the other hand, mankind's lack of interest. The entire world population of tiger is in sharp decline due to traditional Chinese medicine which holds the tiger parts ranging from whiskers all the way to testes can heal anything from manic depression to impotence.

The rhino has been hunted for years for the supposed aphrodisiac qualities within its horn and for the status given to Middle Eastern men when they carry "jambijjas", ceremonial daggers made of rhino horn. Most felines, canines, lupines and reptiles are now endangered due to the use of their furs and skin as fashion accessories. In short one of the biggest threats to wildlife species is that of mankind's attitude of self interest and self service towards nature.

On the other hand, the lack of interest demonstrated by most of the poorer people who simply try to live day to day has also been detrimental for wildlife populations. The average poacher in Nepal is a local villager who earns more time than a year's income from the yield of one poaching incident. They have little understanding of the long term

implication of decrease in wildlife population. The solution to the problem of poverty that he and his family face is right across the fence; inside the boundaries of a wildlife reserve or national park. In many cases, the villagers live on the bare subsistence level and look to the reserve park for additional income by gathering fodders for their animals or harvesting kurilo (asparagus) and also by poaching flora and fauna.

5.2 Nepal Army Protection Unit

A separate Nepal army unit has been deployed specifically for protection of the park since 1975 AD. At present army battalions with 331 staff in park headquarter Kasara and 307 staff in 37 posts are protecting the park. The army battalion is led by a lieutenant colonel under Nepal Army, National Parks and Reserves Directorate. The protection function of the park is conducted under a close co-ordination between the Chief Warden and the lieutenant colonel.

The number of army post had been reduced to 7 from 34 during the insurgency periods which is now began to reinstall them and all the posts are up to now not relocated although.



Figure: Distribution of Various Post in CNP

Source: (DNPWC, 2003)

5.3 GAP ANALYSIS:

Mainly two types of gaps as institutional gap and policy gap were found as the role playing agent for the antipoaching operation in the CNP.

5.3.1 Institutional Gaps

Locals are not satisfied with protection measures for park animals. The mobilization of security personnel in the field is not considered to be effective. Poachers are well aware of security systems of parks and are familiar with areas not covered by surveillance patrols. Individuals involved in poaching and illegal trade are protected by politicians and elites in power, creating a situation of impunity to wildlife crimes.

Patrolling and surveillance are seriously inadequate to keep wildlife safe due to lack of resources for anti-poaching units. Social security, financial support and general encouragement are severely lacking, thus discouraging active involvement in anti-poaching operations. Threats to individuals during operations remain a problem.

5.3.1.1 Field Guard Posts

The fields guard posts are based on the vulnerability of an area, regarding the poaching of wildlife. Guard posts in CNP are not adequate in number. There are also large areas to be covered during patrolling. Posts do not have adequate resources. During the rainy season, a period of greater vulnerability to poaching, staff mobility is hindered by swollen streams. Attempts at creating better communication in the park have not been adequately addressed. Field personnel rely on public communication systems, even in highly sensitive cases. The communication gap between posts and headquarters is evident due to a lack of efficient communication system.

5.3.1.2 Mobile anti-poaching units

The park patrolling system attempts to provide surveillance throughout the park. The army and the park personnel patrol the park areas. Anti-poaching units, consisting of local APU members and Park personnel, patrol the area outside the park. An informant network operates in the villages and settlements around the park. Paid informants trace illegal activities in their respective areas and communicate this information to the park.

There is no clear mechanism for implementing the existing policies. There is no government budget available for informers. However, monetary incentives for informants are to be based on the authenticity of information provided. Sometime, an informer receives Rs 500 to Rs 4000 per month. Cash rewards have been effective motivators for informers. With the help of conservation partners, donors and trust, cash rewards up to Rs 100,000 was handed over to informers on phase-wise basis in Chitwan.

5.3.2 Policy Gaps

5.3.2.1 Poverty trap

People residing on park borders are affected by destruction caused by wildlife. Wildlife is sometimes killed in retaliation. For locals, the central issue is economic hardship; rural populations are poverty stricken and always in need of money to sustain basic livelihoods. There people have been easily lured by poaching syndicates with promises of easy money. Local communities often bear the brunt of punishment and penalties from poaching, whilst traders and lures often manage to avoid being caught.

5.3.2.2 Compensation issues

Compensations to locals for damages caused by wildlife is often not satisfactory. The BZ fund is not sufficient to cover these costs. Awareness has not been transferred to local people and institutionalization has not been properly implemented. In order to curb wildlife poaching and illegal trade, the involvement of organizations in spreading awareness in the communities in BZ is essential and should be strengthened.

Public awareness is a key factor in minimizing incidences of wildlife poaching. Local communities should be compensated for crop damage caused by wildlife. A system of reward and punishment should be developed

5.3.2.3 Park Management

The parks have global significances; however, management methods are still traditional. Habitat and population management has not been effective. The park has been threatened by the spreading of grazing land for animals as well as increases in livestock populations. This has brought about fears for starvation in the near future for wildlife dependent on grasslands.

5.3.2.4 Buffer zone

The buffer zone policy needs revising in relation to policy on authority sharing between BZMC and BZUCs. Provisions to provide alternatives to traditional livelihood to eco-friendly livelihood options for the poor in the buffer zone should be established. Management practices of the park should follow scientific norms without compromising local needs. Times have changed since the information of NPWC Act 2029 so monitoring, patrolling and tourism activities should be regulated.

The buffer-zone program is considered to be an effective solution to wildlife crimes. The government shares 50% of park revenue with buffer zone communities, with the expectation that communities will aid in defense of the core zone (park) for poachers and intruders.

5.3.2.5 Awareness campaigns

Prior to the allocation of a government budget, partner organizations conducted several raising programs and campaigns targeting local people. Though such programs, youths, ethnic groups. Women and backward communities have contributed, ultimately supporting conservation and controlling of illegal activities like poaching and illegal trade.

Awareness alone is not sufficient to induce communities toward wildlife protection. There is no alternative to conservation, but alternative livelihoods exist to operate on the ground. Awareness campaigns and procedures should be modified with Research and Development to achieve maximum conservation. Relations between park-people and the park-army should be harmonized for smooth functioning and synchronization between bureaucratic and community participatory systems.

5.3.2.6 Government Resources

The practical approach to stop illegal trade in wildlife items would be to tighten borders, establish intelligence and patrolling systems, and launch public awareness campaigns. Poaching and illegal trade in wildlife was also not of high priority to the government. Resources made available for anti-poaching activities is less.

In some cases, the government cases, the government system is helpless in controlling poaching. One major contributor is direct political interference in the forest administration. Promotion, incentives and facilities are also entirely based on personal approach and contacts.

5.3.2.7 Legal actions

There are loopholes in existing laws. The chief warden has authority of quasi-judicial power. However, none of the chief wardens are fully trained in exercising such quasi-judicial power as they are biologist rather than the law implementing judges.

5.3.2.8 CITES implementation

The issue of wildlife is not of central concern to the forestry department, whose focus is on other forestry issues. The department has not been able to lead and co-ordinate partner agencies in the CITES implementation. As a partner of CITES implementation the police force needs to be integrated, with solid responsibilities and well defined duties on wildlife issues. Political instability has delayed passing of CITES bill in parliament. The customs department lacks manpower and capacity to implement CITES.

CITES implementation has been frequently referred to by protected area managers as well as protection units and customs. Nepal became a member of CITES as early as 1975. Efforts have been made to formulate CITES implementation act since 1998. There had been suggestions to amend the sum for poaching fines.

5.3.2.9 Policy and legal issues

Policy for controlling poaching and illegal trade in wildlife and their part does not match with practices. The resources required for effective operation in curbing poaching and illegal trade are far higher than available resources- both financial and technical. The loopholes seen in legal issues regarding punishments and penalties to offenders are also problematic. Policy formulation requires the inclusion of new dynamics of participatory conservation and clarification with clear rights and obligations among local organizations such as BZMC, BZUCs, and NGOs. An autonomous status for protected area systems will be more effective in the wildlife conservation and management without complex bureaucratic impediments.

From the perspective of protection, the protected areas should be sealed so that no activity such as grass cutting, firewood collection and, eventually, poaching can be carried out within the park borders.

Chapter 6

Conclusion and Recommendation

6.1 Conclusion

Poaching occurred through out the park with the highest concentration in Sauraha and Madi sector. This could be because of the highest concentration of rhino and tiger population in these areas. Its also shows that wildlife species other than rhino are also affected by poaching activities since poaching incidence have occurred through out the park.

Rhinoceros was the main target species because of the increased price of the rhino horn in the market. The official record shows that poachers only remove the horn probably because of lack of time. Other rhino parts such as nails and skin are considered valuable.

Although APU and NA patrols where quite successful to locate the poachers, they could not achieve desirable success in capturing them. One of the reasons behind this was that the poachers were in groups equipped with guns. Furthermore, it is not clear how many groups were seen by the combined patrol team and the unarmed APU. One the problem faced by the APU team is the remoteness of some of the park area. APU member often hear gunshot and see smoke but by the time reach the spot, the poachers manage to make their escape.

Most of the incidences have occurred in the night. The use of vehicle is also not effective as the poachers hear the sound and see the light at the vehicle. It is equally difficult for the unarmed APU team to patrol on foot in the night.

Nearly about one hundred rhinoceros were poached within last five years in Chitwan. High price in the international market has increased the demand of rhino horn and other animal product and there by threatens the survival of these critically endangered species. Efforts made in the field level to control poaching alone are not sufficient to protect this endangered species. Authority should also focus equally to control trade of horn and other valuable part of wild animals, for which CITES implementation and support from

other agencies such as custom, police, Army is required. Intelligence network and law enforcement in major city areas is inevitable. More importantly, favorable legal provision and strict law enforcement is important to ban consumption in consumer countries.

Attempts made at all levels to curb recently escalated poaching incidents are significant but need further strengthened. Viewing all the success and failures during the last 3 decade, an Anti-poaching mechanism with motivated staffs that regularly monitors the core area, constantly collects and updates information, keep better coordination with park staff, NA, and other agencies, and is able to generate extra fund for operation and conduct operation on time can be considered the best. The park and NA staff should take it as a guiding principle.

Geological complexities of Chitwan National Park have also affected the patrolling manly during the monsoon seasons. Monsoon floods restrain APU mobility. Usually poachers manage before APU can get to them, making the task of the APU even more difficult to find whereabouts. Most of the poachers manage to escape during encounter. This makes it impossible to locate the area they come from. However, capture record shows that people from Surkhet, Makwanpur, Chitwan as well as the local ethnic group were found to be more engaged in the poaching activities.

Rhino is a major attraction for tourist in Chitwan and tourism makes the major source of park revenue, of which thirty to fifty percent is channeled back for buffer zone development. Since the buffer zone communities are major beneficiaries of the park revenue, they should be made more accountable towards safeguarding the park and buffer zone resources including antipoaching initiatives. Community based antipoaching systems with effective coordination and collaboration with the park authority would probably be a need to secure rhinoceros and their habitats.

Presence of RNA, clearly defined regulations against poaching, staffs' willingness to combat against poaching activities, team sprit in the field, increasing cooperation from local community, effective information network, success in capturing poachers middlemen and traders, availability of elephants to operate even during the adverse climatic conditions, supports from conservation partners (WWF, KMTNC, ITNC and BZMC) and active participation of local communities still gives a great hope to ensure the viable population of rhinoceros, tiger and other endangered species in CNP.

So to checkout the poaching and illegal trade, the good altitudinal behaviors of the people should be raised by the help of awareness program and the concept of people should be change from single use system to multiple use system of the resources, flora and fauna of Chitwan National Park

6.2 Recommendation:-

To make APU more effective the following recommendations have been made:

- It is necessary to increase the number of anti-poaching staff. Investing in vehicles will allow for more effective mobility can turn out to be quite cost effective.
- Mobile communication set are necessary to improve the over all effectiveness of the APU especially in remote areas in each four sectors which help to carry out operations rapidly and will also provide easy communication with headquarters when in need of extra assistance.
- The reward & punishment system should be bolstered with an education program system so that the local villagers are given to understand the results of poaching & trafficking of wildlife species. The rewards and punishment system needs to be publicized so that the local villagers are aware of the rewards for the information leading to the capture of poachers and traffickers.
- An APU is required whose components include the chief warden, District forest officer and regular game scouts since such as anti-poaching unit would have provision of law informant outside the protected areas. Wildlife species are often killed directly across the borders from chitwan. A large number of wildlife items like tiger skin and rhino horn are smuggled through the international border between Nepal and India. These situations necessitate verbal communication between government officials from both sides in order to prevent illegal poaching and trade.
- There should be coverage of medical bills, compensations for fall injuries and general insurance for the anti-poaching unit's staff members.

- Along with awareness programmes for the local people, total deterrence from poaching and trafficking require that anti-poaching operations include similar awareness and education package for consumers. A public who are quite ignorant of conservation policies, wildlife data and the harmful effects of buying wildlife product.
- It must be pointed out that unless there are long term projects focusing on environmental education for the local people and the national and international consumers, the problem of poaching and dealing of wildlife will not disappear, Further as long as the majority of local villagers live under the condition of subsistent-level poverty, anti-poaching units will not be sufficient against the poachers and poaching activities in the wildlife projected area.
- The study focused on wildlife trade and poaching should be regularly carried out for preparation of the mechanisms and monitoring of changes in routes or target species or hot spot and methods for monitoring known individuals.
- The effective law enforcement is recommended to control known routes and at market and border crossing points and improving co-operation among enforcement personnel and the exchange of intelligence of local, national and international levels.
- With adequate provision of enough manpower, additional guard posts should be exacted within short geographical distance (minimum at the distance of 5 km). Old and experience ranger and military people of former gaida gasti could share experience with APU unit, as they have knowledge, skill and experience for anti-poaching operations. Guard posts should be exacted not from political boundary point of view, but from the strategic point of view. Some of the guard posts should be relocated.

- Conservation program needs long term service and long term commitment. Chief Warden and Assistant warden should not be changed so frequently. They should be given adequate time to work in the park.

- International market of wild animals' provides great incentives to poachers. Until international market of wild animals' parks remains open, poaching of wild animals will not stop through out world in general and Nepal in particular. Therefore, a strong international Act against international trafficking of wild animals' part should be made more effective for an effective control of poaching. Nepal is a member of Convention of International Trade in Endangered species (CITIES) and DNPWC is not working so effectively to control international trafficking of wild animals' parts in Nepal. In order to make it more effective, custom and police offices other should be involved for operation. The other related agencies like CITIES Networks, tiger forum and IUCN should also be involved for monitoring the export of animal parts from Nepal.

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Annex 1

QUESTIONNAIRE PREPARED FOR THE LOCAL PEOPLE

Name of the interviewer _____

Name of the village _____

Numbers in the Household

Aged people male _____ female _____

Adult male _____ female _____

Children male _____ female _____

TOTAL POPULATION: _____

1. What is your primary source of livelihood?

- a) Agriculture b) poultry & animal husbandry c) Industries
d) Services e) specify others.

2. Is your income source enough for your living?

- a) Yes b) Yes with surplus c) No

3. Have you heard about any poaching activities taking place over here?

YES _____ NO _____

When do you heard about the poaching activities?

- a) Within 1 month b) between 1-6 month c) between 6 month-1 year
d) Between 1-3 years e) more than 2 years ago

4. Have you ever seen the poachers?

- a) Yes frequently b) Sometimes some c) No

5. Which weapon or tool does the poachers generally carries? Give rank

- a) Modern equipments b) local guns c) local weapons d) specify others
5. What may be the cause of increase\decline in the poaching activities in this particular area?
 a) They know the area better b) Nepal Army c) park management d) specify others
6. In which place do more poaching activities takes place?
 a) _____ b) _____ c) _____
 d) _____ e) _____
7. Why do you think the poachers poach the wild animal in this particular place?
 a) They know the area better b) public support to the poachers
 c) Accessibility d) weak park protection e) others if any
8. Do you know where do they usually sell the wild animals or their parts?
 a) directly to the India b) Directly to the China
 c) To the local traders d) to the trader of Katmandu e) specify others
9. Does the wild animal have harm you?
 a) Yes b) No
 If yes then what was the loss?
 Life loss of _____
 Property loss of about _____
10. Why do think wild animals are important and should be preserved?
 a) For ecosystem b) for tourism
 c) For preserving for future generation d) specify others

Annex 2.

QUESTIONNAIRE PREPARED FOR THE CONCERNED AUTHORITY

Name _____

Designation _____

Duty station _____

Permanent address _____

Local address _____

1. What are the problems, park had faced due to the poaching activities? List main five.

a)

b)

c)

d)

e)

2. In which location does the poaching activities mainly takes place?

a)_____ b)_____ c)_____

d)_____ e)_____

3. Which animal do the poachers mostly victimize? Give rank.

a) Elephant _____ b) Rhino _____

c) Tiger _____ d) Deer _____

- e) Other specific _____
4. How the local people and the local NGOs help the park for your anti poaching activities?
- a) By forming local groups. _____
- b) By giving information related to the poaching. _____
- c) By catching poacher & handling them to us. _____
- d) By patrolling in buffer zones. _____
- e) Specify any others. _____
5. When the poachers are caught, what do you do to them?
- A) Take them to the district court.
- B) Put in yours custody.
- C) Look at the circumstances of poaching & leave them.
- D) Ac the head warden suggests.
- E) Specify any others.
6. Is the poaching activities generally done by the single people or by the strategy group? Give rank.
- a) single people
- b) group of 1-5 people
- c) group of 5-10 people
- d) group of 10-15 people
- e) more than 15 people
7. What do you do to the animal's parts, which is found from the poachers or found in the specific places?
- a) Keep record and store them. b) Keep record and bury them. c) Leave them e) any other specify
8. Is the present laws enough for stopping the poaching activities and for the proper implementation of the anti poaching activities?

- a) Yes b) No c) needs to improve the laws
- d) Need new plans and strategy e) specify any others

9. Do you know where do the poachers generally sell the wild animals or their parts?

- a) Directly to the India b) Directly to the China
- c) To the local traders d) to the trader of Katmandu e) specify other

10. Does the reserve call for the public for discussing any problem related to the poachers?

- a) Never b) once a month c) once a year
- d) twice a year e) specify any others

11. What improvement do you need in your working modality or strategy?

- a) Improve the laws. b) Increase in record system
- c) Increase the member of APU unit d) specifies others

12. What support do you expect from yours partners

Name of partners	Your expectation
------------------	------------------

- a.
- b.
- c.
- d.
- e.

Annex 3

Expectation from the partner organization by the Park's concerned authority

Serial No.	Names of partner	Main Expectation
1.	NTNC	Technical support
2.	WWF	Financial support
3.	Nepal Police	Support administration work
4.	BZ Committee	Awareness
5.	Custom	Administration

Table 4.1 Expectation from the partner organization by the Park's concerned authority

Annex 4

List of the Park's concerned authority present in the discussion

Serial No.	Name of participant	Post	Temporary Address	Permanent Address
1.	Ashok Bhandari	Assistant conservation officer	Kasara,CNP	Lalmotiya-3, Dang
2.	Bidur Ranabhat	Assistant conservation officer	Khagendramalli	Balkot, Bhaktapur
3.	Ganesh Sharma	Na. Su	Kasara,CNP	Jagatpur-3, Chitwan
4.	Indra Raj Upreti	Game scout	Khagendramalli	Gitanagar-4, Chitwan

5.	Lab Jung Thapa	Kharidar	Kasara,CNP	Narayan-2 Dailekh
6.	Lal Bihari Yadav	Assistant conservation officer	Kasara,CNP	Malhaniya VDC-1, Saptari
7.	Mahesh Raj Lamichhane	Kharidar	Kasara,CNP	Hetauda, Makwanpur
8.	Om nath Chudal	Assistant conservation officer	Bankata post, Madi	Baratpur-13, Chitwan
9.	Prem Sharma	Crocodile experienced person	Kasara,CNP, Gharial breeding centre	Deupur-8, Parbat
10.	Ram Chandra Kathiwada	Assistant conservation officer	Kasara,CNP	Hetauda-5, Makwanpur
11.	Ram Chandra Shrestha	Mukhiya	Ghadghai post	Jagatpur-1, Chitwan
12.	Rupak Maharjan	Park Ranger	Kasara,CNP	Panga-9, Kirtipur, Ktm
13.	Yam Bd. Khanal	Game scout	Kasara,CNP	Piple- 7, Chitwan

Table 4.2 List of the Park's concerned authority present in the discussion

Annex 5

Unit/User Committee in CNP Buffer Zone

S.N.	Unit/User Committee	Area (VDC/Municipality)
1.	Lothar	Monahari, Piple
2.	Khagebdramalli	Bhandara, Kathar
3.	Budhirapti	Kumroj
4.	Mrigakunja	Bachhau, Ratnanagar
5.	Barandabhar	Bharatpur, Gitanagar
6.	Patihani	Patihani
7.	Kerunga	Jagatpur, Sukranagar
8.	Kalabanger	Divyanagar
9.	Meghouli	Meghouli
10.	Sikrouli	Amarapuri, Mukundapur
11.	Sisumar	Rajahar, Divyapuri, Prgatinagar
12.	Lamichour	Pithouli, Kawasoti
13.	Amaltari	Ageuli, Kumarwanti
14.	Nandabhauju	Kolhuwa, Narayani
15.	Gosaibaba	Narayani, Parsauni
16.	Daunnedevi	Nayabelhani, Dumkibas
17.	Triveni	Triven
18.	Panchpandav	Gardi, Bagauda
19.	Rewa	Bagauda, Kalyanpur
20.	Ayodhyapuri	Ayodhyapuri
21.	Nirmal-Thori	Nirmalbasti, Thori

Annex 6

Gaps in the process of conservation in CNP

Policy gap	Institutional gap
Poverty	Position of field guard post
Compensation issues	Effective antipoaching unit
Park management	Two authorize head on army and park personnel
Buffer zone management	Training exercise for quasi-judicial power
Awareness campaign	
Government resources	
Legal action	
CITIES implementation	
Policy and legal issues	

Annex 7

Photographs during the Field period



Fig.1. Questionnaire with the park Authority Gharial Breeding centre



Fig.2. Questionnaire with the local at people



Fig. 3. Questionnaire with the park Scout at Khagendramalli



Fig.4. Questionnaire with the BZ staff



Fig.5. Questionnaire with the local people



fig.6. Questionnaire with the BZ staff



Fig.7. Field observation in the park



Fig 8. Marshy habitat of rhinoceros



Fig.9. Bone of rhino in buried Area



Fig. 10. Victimized Rhino for its Horn



Fig.11. Bone of rhino in buried Area



Fig.12. Artificial habitat for rhino



Fig.13. Place(1) where dead leopard was buried in Kasara



Fig.14. Place(2) where dead leopard was buried in Kasara



Fig.15. Place where dead Tiger was buried in Kasara



Fig.16. Arrested truck along with log of woods



Fig.17. Filed photograph of poaching action



Fig.18. Poster for raising awareness