

A Walk to Zero Poaching for Rhinos in Nepal

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Executive Summary

Poaching and illegal trade of wildlife parts have become key threats to biodiversity conservation all over the world, including Nepal. One-horned rhino, tiger, pangolin, red panda are few animals that are illegally traded.. One-horned rhino population is scattered in limited places of Terai Arc Landscape and its poaching for high valued horn in international market has greatly declined its population, listing it as a highly threatened large mammals. Combating illegal trade has always remained as a conservation challenges due to number of factors such as capacity, resources and coordination. The rapid declination of rhino population demanded for immediate actions to secure the future of the species.

As an initiation, Government of Nepal, Department of National Parks and Wildlife Conservation together with key stakeholders has bucked Rhino poaching in the country by adopting 'Zero Poaching Strategy'. Zero poaching year here refers no evidence of killing of animal of trade concerns for continued 365 days or more. The year 2011 can be regarded as a landmark in conservation history of Nepal as no Rhinos were illegally killed in this year. Three more years 2013, 2014 and 2015 followed the zero poaching trend. Thus this study presents the strategies and actions adopted by the country in achieving 'Zero rhino poaching years' which has made significant contribution in combating poaching and illegal trade.

Achieving Zero poaching for four years is a remarkable achievement at a time of worldwide threat from illegal wildlife trade. This success in conservation can be attributed to the commitment of the government, local communities and national and international conservation partners working together to conserve the iconic species along with enforcement of laws and mobilization of security forces- Nepalese Army. The establishment of number of institutions like Wildlife Crime Control Coordination Committee and the Wildlife Crime Control Bureau at national and district level is a noteworthy effort in controlling poaching and illegal trade. Similarly, operation of Central Investigation Bureau of Nepal Police has also played a vital role in breaking market linkages by arresting large number of poachers.

Controlling wildlife crime in Nepal remains a priority of enforcement agencies and their dedication to this cause has proved to be highly effective. Provided that these efforts continue and human as well as institutional capacity of enforcement agencies get strengthened; with effective coordination and collaboration among and between such agencies, wildlife poaching can be controlled efficiently.

Keywords: Rhino, zero poaching, illegal trade, enforcement, Nepal

Abbreviations and Acronyms

APO	Anti-Poaching Operation
APU	Anti-Poaching Units
APYAC	Anti-Poaching Youth Awareness Campaign
BNP	Bardia National Park
BS	Bikram Sambat
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
BZMC	Buffer Zone Management Committee
BZMR	Buffer Zone (Management) Regulations
BZUC	Buffer Zone User Committee
CA	Conservation Area
CBAPU	Community Based Anti-Poaching Unit
CBD	Convention on Biological Diversity
CDO	Chief District Officer
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNP	Chitwan National Park
DFO	District Forest Office
DG	Director General
DNPWC	Department of National Parks and Wildlife Conservation
DoF	Department of Forests
FY	Fiscal Year
GoN	Government of Nepal
INGOs	International Non- governmental Organizations
MoU	Memorandum of Understanding
NGO	Non- governmental Organization
NP	National Park
NPWCR	National Parks and Wildlife Conservation Regulation
NTCC	National Tiger Conservation Committee
NTNC	National Trust for Nature Conservation

NWCCCC	National Wildlife Crime Control Coordination Committee
PAs	Protected Areas
PWR	Parsa Wildlife reserve
SWR	Shuklaphanta Wildlife Reserve
TAL	Terai Arc Landscape
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce/ Wildlife Trade Monitoring Network
WCCB	Wildlife Crime Control Bureau
WWF	World Wildlife Fund
UNEP	United Nation Environmental Programme

Background

Wild species (both plant and animal) are used as the source of a wide variety of goods, including food, medicine, pet, fashion and cultural item, industrial resin and extract, and household item, since evolution. However, poaching and illegal trade of wildlife; their parts and products has become the most challenging and emerging issue for wildlife conservation globally (UNEP, 2014). Wildlife trade refers to any sale or exchange of wild animal and/or plant resources by people (www.traffic.org/trade accessed on 30 April 2016). The growing demand of products has made wildlife trade the biggest direct threat to species, after habitat destruction. Traditionally, wildlife harvest starts at local level which can be for subsistence or trade—moving up the trade chain to domestic, national or international markets. Wildlife trade escalates into crisis when the proportion of harvest from the wild is illegal and unsustainable—directly threatening the survival of many species (www.worldwildlife.org/what/globalmarkets/wildlifetrade/ accessed on 5 May 2016). Many species including some mega species such as tiger, rhinoceros, and elephants are affected by overexploitation.

Organized crime is attracted by the possibility of huge profits with little risk, and penalties that are both disproportionately small and not always enforced (UNEP, 2014). Therefore, wildlife crime has become a big business, run by dangerous international networks, where animal parts are trafficked much like illegal drugs and arms. It is very difficult to obtain reliable figures for the value of illegal wildlife trade, however, global illegal wildlife trade is estimated to be worth US\$7- 10 billion per year which is beyond environmental, social and economic costs of illegal wildlife trade (Wasser et al. 2008; Wyler & Sheikh 2013 cited by O'Donoghue and Rutz, 2016). This on one hand hinders investments in tourism and other types of development while on the other hand greatly threatens the ecosystem and biodiversity which economic development depends upon. Most importantly wildlife trade is threatening a number of species, driving them towards extinction and ultimately undermining countries' efforts to protect their natural resources.

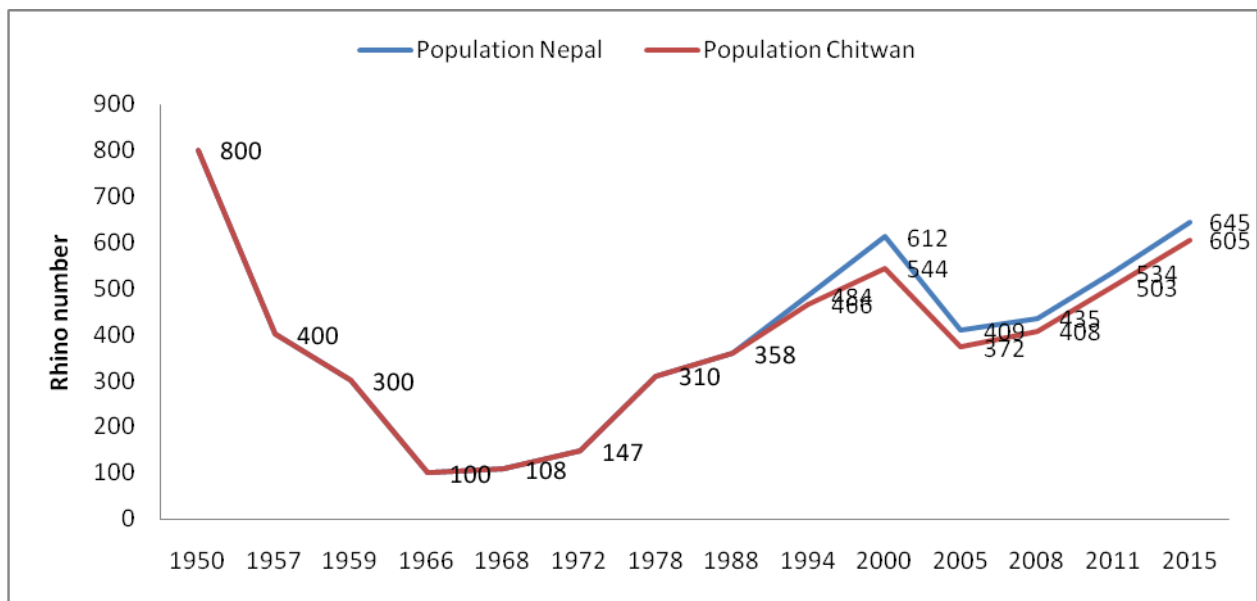
The land culture of local people in Nepal is inextricably linked with natural resources obtained from forests and their use in diverse ways. The country carries a long history of using wildlife and their parts for various religious and cultural purposes as well as for medicinal and decorative uses. But low economy has been a particular cause associated with illegal wildlife trade due to high profit margin for rare and protected species, gradually pushing them towards extinction. Illegal wildlife harvest and supply to high level criminal gangs who have considerable control of the market, has become an easy source of livelihood for locals. Acharya and Kandel (2012) have identified Rhino and Tiger from Terai region; Pangolin and Common Leopard from Mid-hills and Red Panda, Himalayan Bear, Musk Deer, Snow Leopard from Himalayan region as key wildlife species poached and traded in Nepal.

Inadequate resources to effectively control poaching for trade remains one of the greatest challenges. However, Nepal has been able to showcase its efforts towards combating wildlife trade by attaining four zero poaching years since 2011 till date. This study particularly focuses on demonstrating such efforts made in achieving zero poaching years for one-horned rhino of Nepal.

Rhino Distribution in Nepal

One-horned rhinos (*Rhinoceros unicornis*) are found in alluvial plain grasslands, where the grass can grow up to 26 feet (8 meters) tall and in adjacent swamps and forests. Historically, one horned rhinoceros were distributed in Pakistan, India, Nepal, Bangladesh, Bhutan and Myanmar but now they are confined to few scattered places in Nepal and India. In Nepal, Rhinos inhabit in Chitwan National Park (CNP), Parsa Wildlife Reserve(PWR) in the mid lowland, and in Bardia National Park (BNP) and Shuklaphanta Wildlife Reserve (SWR) in the western lowland landscape.

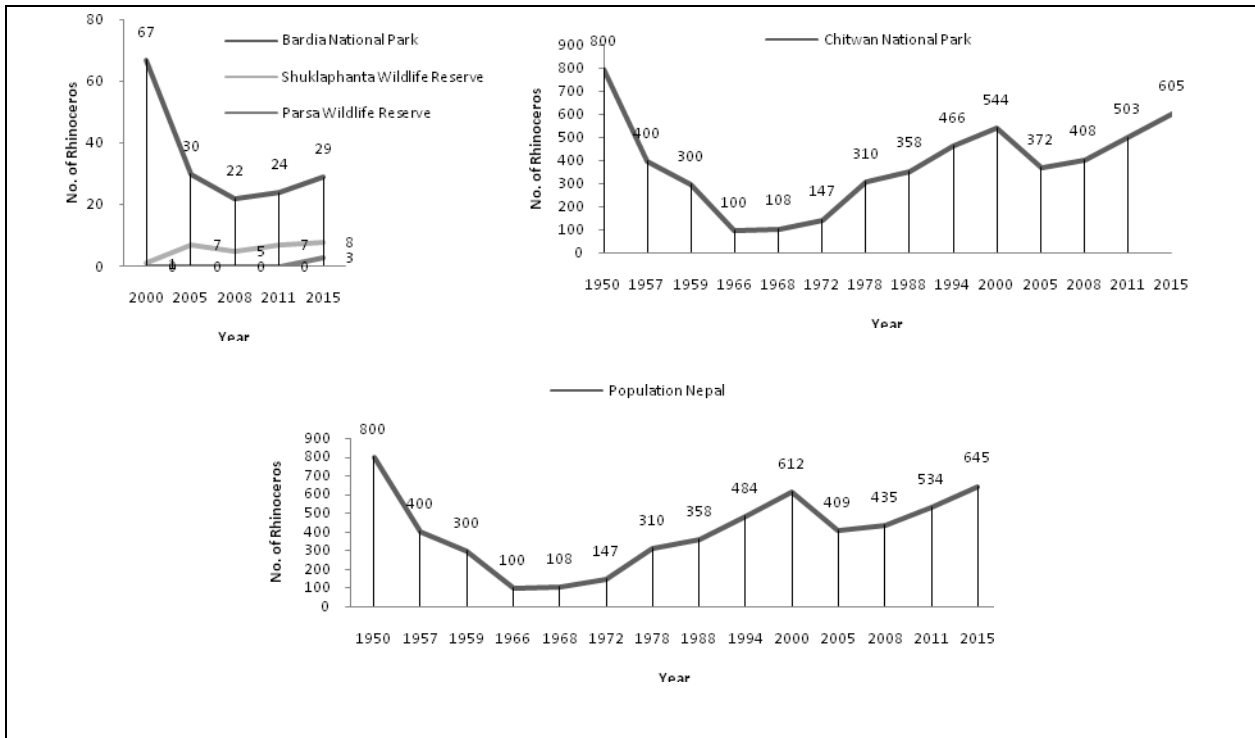
Looking at the history, over 800 rhinos lived in Chitwan until 1950s when its rich biodiversity were protected by then ruling Rana regime. Only a few indigenous people (Tharus) lived here until large population from mid-hills migrated here after the end of Rana regime. The period of clearance of prime wildlife habitats including that of rhinos, tigers and their prey then sparked with the democracy, pushing these animals close to extinction. Rhino numbers dropped to 100 in mid 1960's as shown in Figure 1. The then government therefore established Chitwan National Park in 1973 to control rapidly declining rhino population. As a result, rhino population grew and reached 544 individuals in year 2000 in CNP making a total of 612 individuals in the country.



Source: Rhino Count 2015, DNPWC

Figure 1: Rhino Population in Nepal (1950 -2015)

Rhino population in Chitwan NP and Bardia NP again declined dramatically due to poaching during a decade long social and political instability after 2000. Several efforts were then made to control rhino poaching resulting in gradual increase of their population since 2011 as shown in the graph above. The latest count (2015) shows that rhino population has increased by 21% from 2011. Figure 2 below shows there are 605 rhinos in CNP, 29 rhinos in BNP, 3 rhinos in PWR and 8 rhinos in SWR all together totally to 645 rhinos in Nepal (GoN, 2015). The trend of rhino population in Nepal is illustrated below. The rhino number clearly indicates that new 545 rhinos were added in Nepal in the past 50 years.

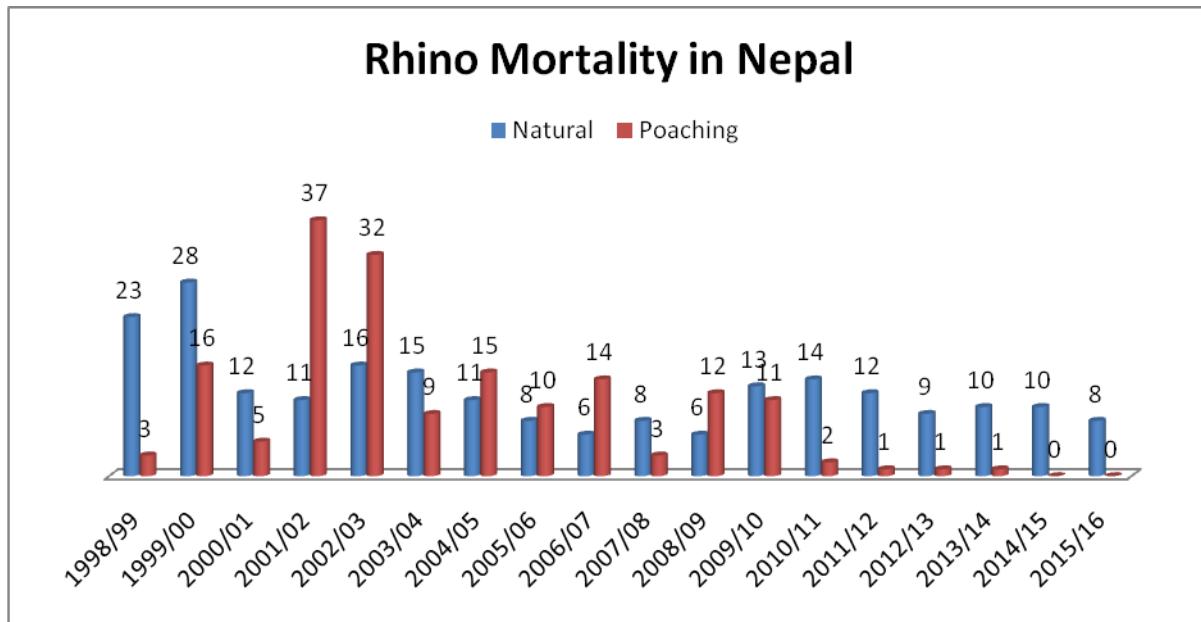


Source: Rhino Count 2015, DNPWC

Figure 2: Rhino Population in Nepal

Rhino Mortality Rate in Nepal

Rhino population in Nepal suffered a catastrophic decline during 1960's to less than 100 individuals due to natural reason as well as habitat degradation and poaching. Figure 3 shows a comparison of rhino death due to poaching and natural causes. It illustrates poaching as a major cause of rhino mortality up to 2010 however, the number of deaths due to natural causes remains almost steady.



Source: Rhino Count 2015, DNPWC

Figure 3: Rhino Deaths due to Poaching and Natural Causes

Rhino population which had gradually reached 612 in 2000, enjoying the greatest conservation success, a decade long political conflict made poaching a serious issue. Figure 3 shows that greatest numbers of rhino were poached in year 2002 and 2003. 36 rhino poaching cases were recorded in 2002 in CNP alone. Since majority of the security/guards posts placed in strategic locations were moved to the headquarters for safety reasons, it provided poachers an easy access to the core areas and hunt wildlife. As a result, intensified poaching dwindled rhino population to 409 in 2005 (Rhino count 2006,).

Between 1986 and 2003, a total of 83 rhinos (13 in Karnali floodplain and 70 in Babai valley) were translocated into Bardia NP from Chitwan NP. In 2008, when National Rhino Census was carried out by DNPWC in collaboration with other agencies, it recorded only 21 individuals in Bardia, all in the Karnali floodplain inside the national park and in the corridor and no rhinos with no sign in Babai valley (DNPWC, 2009). The report showed a distressing population decline by 30%.

Figure 3 shows that killing of rhino for illegal trade of its horn is gradually decreasing. Since 2010, a total of 5 rhinos were poached, justifying decrease of rhino poaching for trade and increase of rhino population in recent counts.

Growing Rhino threats

Rhino is one of the highly threatened large mammals in South Asia and Africa due to uncontrolled poaching, degradation and loss of available habitat by prevalence of invasive alien plant species. One-horned rhinos are poached in Nepal due to high demand for their horns, which is believed to be used in traditional Asian medicine to treat a variety of ailments. In Vietnam, the recent myth that rhino horn can cure cancer has led to massive poaching in South Africa and pushed the price of rhino horn to rival gold (<http://www.worldwildlife.org/threats/illegal-wildlife-trade> accessed on 5 May 2016). Rhino horn can

sell for \$66,139 per kilogram in Chinese black market, more than the price of gold or platinum (Lawson and Vines, 2014). Rapidly growing demand and illegal wildlife trade has made rhino poaching even more lucrative for poachers.

On the other hand invasive alien plant species have immense potential to destroy prime rhino habitat. *Mikania micrantha* in Chitwan and *Lantana camara* in Bardia have heavily encroached most of potential rhino habitats and community forests in the buffer zones (DNPWC, 2009). Several invasive plants now have been established and their impacts are likely to be enormous, as loss of native flora directly influence feeding patterns of herbivore population. In addition, substantial pressure from livestock and illegal human encroachment and settlement, illegal timber extraction, weak monitoring mechanism on movement of animal across border and insufficient resources for adequate security in critical location are growing Rhino threats in Nepal. Human wildlife conflict is another challenging issue to be dealt with (DNPWC, 2009).

Although international trade of rhino horn has been banned under CITES since 1977, the demand remains high, fueling rhino poaching. This iconic species has been listed in Annex-I by CITES and is classified as "endangered" by the IUCN Red List, which is the category belonging to animals facing very high risk of extinction in the near future. It is under strictly protected animal by National Parks and Wildlife Conservation Act 2029, Nepal. However, species listed as rare carry even more trade value in international market. The true scale and value of wildlife trade is difficult to quantify as higher proportion of the trade is carried out through informal networks, and not documented or captured in government statistics, and/or is illegal, and accordingly is not recorded.

Achieving Zero poaching

With alarming rates of poaching and rhino trade, both national and international conservation communities came together for immediate action to secure the future of Rhinos. The initiation by Ministry of Forests and Soil Conservation, Department of National Parks and Wildlife Conservation and Department of Forest together with other key stakeholders attempted to combat Rhino poaching in Nepal. As a result not a single Rhino was hunted for trade purpose in 2011, making it as a landmark in the conservation history of Nepal.

Giving a new spirit towards conservation the word "Zero Poaching" was proposed during WCCC meeting to celebrate first 356 days for no rhino poaching in Nepal on January 1, 2012. Hence, Zero poaching was referred as no evidence of killing of animal of trade concerns for continued 365 days or more. The year 2013, 2014 and 2015 were again celebrated as Zero poaching years which provide evidence for successful history of rhino conservation in Nepal (Table 1). Continuous 730 days since the last poach portrays Nepal as a prototype where conservation of wild animals is possible.

Table 1: Zero Poaching of Rhino Summary Table

S.N.	Poaching dates		No poaching days	Celebration
1.	3 January 2011	3 April 2012	456	Zero Poaching 2011
2.	16 February 2013	3 May 2014	441	Zero Poaching 2013
3.	No poaching		365	Zero poaching 2014
4.	No poaching		365	Zero poaching 2015

Efforts for Zero poaching

Nepal is signatory to and is member of a number of international conventions and organizations related to wildlife and environmental conservation. The most important are Convention on International trade in Endangered Species of Wild Fauna and Flora (CITES) in 1975 and Convention on Biological Diversity (CBD) in 1992. Nepal is also slowly emerging at a staging post for wildlife trafficking. Enforcement of National Park and Wildlife Act (1973), National Park and Wildlife Regulation (1974), Wildlife Reserve Regulation (1978), Buffer Zone Management Rules (1995), Forest Act (1993) and Forest policy (2015) are some of the policy level initiatives taken by the government.

The trend of establishment of protection areas started with CNP in 1973. Government of Nepal has implemented various control measures to stop poaching and trade, including Rhino conservation activities. In its effort to conserve biodiversity since 1970s, Nepal has gradually evolved from species conservation to landscape conservation. The paradigm shift from strict protection approach to multi-stakeholder approach has enhanced coordination and collaboration among concerned agencies. Provision of buffer zones further spread the conservation sprawl where local people depending on natural resources are involved. Different strategies, mechanisms, programs and activities initiated after 2010 as a means to control species poaching, focusing on rhinos, are described briefly;

i. Institutional Set Up against Poaching and Illegal Trade

With an urgency to address national as well as international ramifications of wildlife crime and considering inadequate resources, need of an organization with statutory powers was absolute. Therefore, as per the decision of Cabinet meeting chaired by then Hon. Prime Minister on Mangsir 5, 2067 (November 21, 2010) Wildlife Crime Control Committees at different level were established under Ministry of Forest and Soil Conservation to curb ongoing wildlife crimes. Their roles and responsibilities are explained as follows;

National Wildlife Crime Control Coordination Committee (NWCCCC)

Chaired by the Minister of Forest and Soil Conservation, NWCCCC has secretaries and members from different ministries (like Ministry of Home Affairs, Ministry of Defense, Ministry of Finance, and Ministry of Forests and Soil Conservation), Chief of Nepal Army, Inspector General of Police (IGP) of Nepal Police and Armed Police Force, Chief of National Intelligence Department and Director General (DG) of

Department of National Parks and Wildlife Conservation (DNPWC). Its major duties and responsibilities are:

- Formulating essential policies, legislation and directives to enhance coordination and collaboration among various inter-governmental and non-governmental organizations so as to control wildlife crime.
- Fostering coordination, collaboration and cooperation at national and international level.
- Monitoring and evaluating the activities of Wildlife Crime Control Bureau.
- Arranging essential human & financial resources and technical support for Wildlife Crime Control Bureau.
- Providing essential instructions and suggestions to Wildlife Crime Control Bureau to control wild flora and fauna crime.

Wildlife Crime Control Bureau at central level (WCCB)

The secretariat of central level WCCB is at DNPWC. The organizational structure of central level WCCB consists of DG of DNPWC as coordinator and DG of Department of Forest (DoF), DG of Department of Customs (DoC), Brigadier General of Nepal Army, Deputy Inspector General (DIG) of Crime Investigation Bureau (CIB), DIG of Armed Police Force, Investigation Director of National Investigation Department, two representatives from NGOs working for wildlife conservation in Nepal and DDG of DNPWC as the member secretary.

Major duties and responsibilities of central level WCCB are:

- Controlling poaching and illegal trade of wildlife and their body parts under the instruction of NWCCB.
- Coordinating and collaborating different enforcement agencies and stakeholders to control poaching and illegal wildlife trade.
- Regularly monitoring the activities to combat poaching and illegal trade of wildlife and their body parts.
- To carry out above mentioned activities, if necessary, forming and regulating district level WCCB.

Wildlife Crime Control Bureau at district level (WCCB)

District level WCCB comprises of officers from District Forest Office, District Police Office, National Parks and Wildlife Reserves as well as representative of Nepal Army who are assigned for security of the related Protected Areas. District Administration Officer (DAO), Government Attorney and officer from Customs are also involved. For National Parks and Wildlife Reserves that cover more than one district, every district level WCCB must involve representatives. The staffs of this unit are sent to deputation.

The major duties and responsibilities of district level WCCB are given below:

- Controlling poaching and illegal trade of wildlife and their body parts under the instructions of central level WCCB.
- Coordinating and collaborating different enforcement agencies and stakeholders to control poaching and illegal trade of wildlife and their body parts.

- Regularly monitoring of activities to combat poaching and illegal trade of wildlife and their body parts.
- Providing necessary suggestions regarding improvement in policies, legislations as well as institutional reforms to Government of Nepal, to strengthen mechanisms to combat illegal wildlife poaching and trade.
- Submitting timely work progress to central level WCCB

National Tiger Conservation Committee (NTCC)

To ensure multi-stakeholder cooperation and proactive initiation of law enforcement agencies, National Tiger Conservation Committee (NTCC) was formed under the chairmanship of Prime Minister comprising of Minister for Home Affairs, Minister for Finance, Minister for Environment, Minister for Defense, Minister for Law and Justice, Chief Secretary of Government of Nepal, Two National / International Tiger Experts, one representative from Tiger Conservation Partner Organization as member of the committee. Minister for Forests and Soil Conservation is the member secretary of the Committee. Its major contribution was mobilization of CIB for controlling wildlife crime and trade.

ii. Capture and Seizures- Law enforcement

In the period of 5 years since 2011, approximately 2,400 people involved in poaching and illegal trade of wild animals were arrested by DNPWC under National Parks and Wildlife Conservation Act, 1973. Some of those notorious wildlife criminals had arrest warrants pending for 10 years or more and person with a fake death certificate issued from a hospital was also arrested. Special attention was given for arrestment of traders - most wanted criminals in Kathmandu having international linkages. The strategy was to break down the existing market link, therefore among active wildlife criminal groups in Nepal, 4 are under custody and very few are working passively. It will take few more years to develop similar linkages of criminals as some notorious ones have already been arrested. Wildlife Crime Control Bureau at central and district level have played significant role in making important seizures of wildlife parts and their derivatives.

iii. Engagement of Local Community

For effective and sustainable conservation of forest, wildlife and other natural resources, and control of poaching/ illegal harvest and trade of wildlife, all the institutions, government and donor agencies involved in national park and wildlife conservation collaborated to form a community based anti-poaching unit (CBAPU) in their respective working areas. The objective of this unit is to assist the government in law enforcement, aware community on wildlife conservation and facilitate human wildlife conflict management and moreover capture wildlife criminals. In 2060 Anti-poaching Youth Awareness Committee was formed in Nawalparasi and APYA campaign was launched in CNP. From 2064-2069, 58 CBAPU has been formed in Buffer Zone User Committee of Makawanpur, Bara, Parsa, Chitwan, Nawalparasi, Banke, Bardiya, Surkhet and Kanchanpur. Altogether 331 CBAPU have been established till 2072 in different parts of the country. Every year CBAPU Day is celebrated on the occasion of World Wildlife Day on March 3rd. This accounts the effort made by the committee in wildlife conservation.

Also, benefiting sharing mechanism with local communities through Buffer Zone policy has also motivated communities for conservation activities as 30% - 50% of revenue was ploughed back to BZ communities for their development activities.

iv. Monitoring and Use of New Technology

Regular monitoring and periodic species census is essential to update the conservation status in Protected Areas. Therefore, GoN in collaboration with local community and conservation partners has been conducting rhino census in Nepal at an interval of 3-5 years since 1994. Rhino census and monitoring is found to be beneficial in providing crucial information to management and scientific community for devising effective strategies for rhino conservation.

Camera traps, satellite radio collars and, most recently, Google Glass are used to track threatened species like rhinos. In 2012, Nepal deployed conservation drones to act like 'eyes in the sky' to track down poachers in remote and hard-to-reach places. It has also turned to specialized tools and software to boost the effectiveness of anti-poaching operations and help direct foot patrols and other resources to areas where they are needed the most. Nepal Army has established well trained Sniffer Dog Unit in CNP. This strategy is observed to be very effective.

v. Enhanced Interagency Coordination

DNPWC and field offices are actively working to control wildlife poaching and illegal trade. Nevertheless, role of other stakeholders has been inevitable. Poachers are arrested with cooperation from other agencies, including Nepal Police. The celebration of four zero poaching year is a significant and historic achievement which was not possible without interagency coordination. Department has started preparing anti-poaching and illegal trade strategies with concerned stakeholders believing that these strategies will facilitate the process and modality of actions for effective control of wildlife crime. Thus, poaching and illegal trade will diminish with proactive cooperation between security agencies and stakeholders.

vi. Trans-boundary Cooperation

Trans-boundary cooperation is observed to be crucial in maintaining habitat contiguity and connectivity for meta-population of flagship species and reduce cross-border conservation threats. The enforcement of wildlife conservation legislation in Nepal remains a challenge especially because of open border. So, to address various issues including poaching and illegal wildlife trade, a series of trans-boundary meeting between neighboring countries, India and China are regularly held since 1997. These have helped in collaborative action for stopping wildlife trafficking. The delegates of the three countries discuss on specific issues for optimizing co-operation in order to prevent smuggling of wildlife species and endangered medicinal plants in detail. In addition to this trilateral dialogue, bilateral meetings upon existing Memorandum of Understanding (MoUs) are also held time to time. The country has joined the South Asia Wildlife Enforcement Network (SAWEN). Thus coordination and cooperation with neighbor countries is equally important for effective abolition of wildlife crime besides coordination with law enforcement agencies within the country. Also an agreement to establish an intelligence-sharing network with other tiger-range nations to help fight trafficking was done among Asian countries during

Anti-poaching Symposium held in Kathmandu, Nepal in February 2015 (<http://www.earthtouchnews.com/conservation/conservation/5-reasons-why-nepal-is-winning-the-war-against-wildlife-crime> accessed of 15 May 2016).

Discussions

Controlling wildlife crime in Nepal remains a priority of the enforcement agencies and their dedication to this cause has clearly proved to be highly effective. 2011 is regarded as a landmark year in conservation history of Nepal for not a single Rhinowas poached in that year. The years 2013, 2014 and 2015also followed this trend of zero rhino poaching. This has had a global significance at a time of worldwide threat from illegal trade, more specially growing rhinos poaching in African countries. The achievement was due to strict enforcement of existing law without promulgation of any new law.

This success in conservation can be attributed to collaboration efforts of all enforcement agencies between the GoN, local communities, conservation partners and security forces in the country. It was found that the involvement of multiagency in controlling illegal trade and poaching through establishment of a number of institutions such as Wildlife Crime Control Coordination Committee and the Wildlife Crime Control Bureau from central to district level that included representatives of all the enforcement agencies contributed significantly in bucking rhino poaching in Nepal. Similarly, operation of 'Wildlife Crime Control Pillar' under the Central Investigation Bureau of Nepal Police also played a vital role in cracking down the poachers' network.

The joint efforts from center to field level with amalgamation of several strategies and actions to enhance strict law enforcement contributed to achieving this success. 24 hours patrolling throughout sensitive time and locations, strengthening of existing security posts and establishment of new security posts in strategic locations complemented strict protection measures in the parks. A number of activities focused to increased awareness and sensitization of local communities, involvement of youth organizations and buffer zone committees, awareness campaigns and conservation efforts through the mobilization of Community Based Anti-poaching Units were made.

Reliable information and cooperation from CIB, army deployed at park and police at field level should be credited for successful anti-poaching operations. Together with important seizures and arrests of illegal wildlife traders, WCCB has played a significant role in bringing commitment and dedication among several institutions to work rigorously for protection of wildlife. It has also played a pivotal role in fostering cooperation, coordination and collaboration among relevant national agencies and stakeholders who have capacity, expertise and skills to combat illegal wildlife trade. Furthermore, it has enhanced communication between various related institutions who work to control wildlife crime thereby sharing and updating information and resources.

Improved coordination and communication among enforcement agencies have made field actions faster and convenient. Moreover, it has brought the issue of wildlife crime at the highest political level, thereby bringing huge attention to wildlife crime at national level. As a result, combating wildlife crime is a high priority for enforcement agencies and their dedication to this issue has clearly proved to be highly effective in curbing illegal wildlife trade. Provided these efforts continue and human as well as

institutional capacity of the enforcement agencies get strengthened, with effective coordination and collaboration among and between various enforcement agencies, wildlife poaching can be controlled efficiently.

Conclusion and Recommendations

The analysis complemented with experience that institutional strengthening, community engagement, mobilization of security agencies, information sharing greatly supplements conservation efforts. Capacity development of enforcement agencies supported with the use of modern technology and functional partnership backed up the achievement. It can be concluded that team work of all enforcement agencies with identified areas of expertise such as Nepal Police in controlling trade and Nepal Army in protecting conservation areas, has enhanced law enforcement, controlled poaching and broken market linkages. Similarly, engagement of local communities and youth through CBAPU in assisting the whole process cannot be overlooked.

The case has demonstrated that multiagency enforcement and partnership is possible with effective coordination and communication through a committed government leadership. Such integrated efforts must be continued and further emphasis should be given in strengthening and promoting regional and trans-boundary cooperation. Nevertheless, following aspects should also be addressed to showcase more effective results in conservation of great one-horned rhino as well as other wild animals.

- Monitoring law enforcement by recording information on: number of hours spent on patrols, areas covered, carcasses found, animal sightings and illegal activities
- Effective public engagement and control of invasive species for conservation of species and their habitat
- Establishment of regular intensive block monitoring and integrated standardized monitoring along with a reporting system by conducting rhino monitoring trainings, population master files, computerized GIS databases, standardized reporting and demographic analysis, etc.
- Publishing National and Individual park reports and their comparison. These reports may include information on population size and structure (Sex and age); female breeding performance; mortalities; territories/home-ranges and behavioral observations; security; habitat, ecological and social carrying capacity; community programs etc.
- Establishment of dedicated armed and well trained law-enforcement & anti-poaching unit with adequate equipment, transport and base accommodation
- Encouraging existing CBAPU for conservation of other species is also equally essential for biodiversity conservation

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