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*Terai Arc Landscape
Annual Report
10/01/2004 - 09/30/2005*

for

World Wildlife Fund

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Eastern Himalayas Ecoregion: Terai Arc Landscape

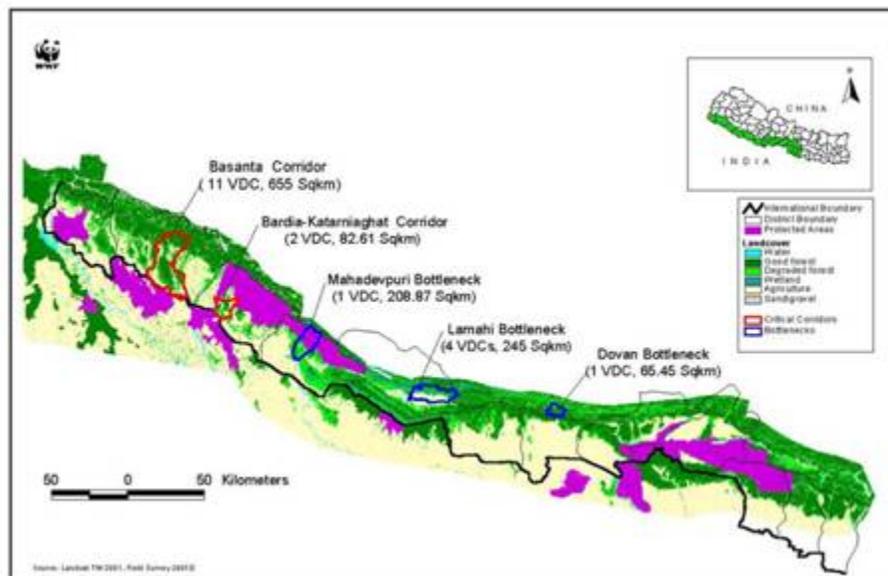
Project Overview

Description of Site

The Terai Arc Landscape (TAL) encompasses the only remaining natural habitat on the southern slopes of the Himalayas for large mammals such as the Royal Bengal tiger, Asian elephant and one-horned rhinoceros. The TAL Program was initiated with a vision of creating a single functioning landscape through the restoration and maintenance of forest corridors connecting 11 protected areas¹ from Parsa Wildlife Reserve and Royal Chitwan National Park of Nepal to India's Rajaji National Park, covering an area of approximately 49,500 square kilometers. TAL encompasses one of the most biologically diverse habitats on Earth and is part of the Terai-Duar Savannah and Grasslands Ecoregion. The alluvial grasslands and subtropical deciduous forests of TAL support 86 species of mammals, 550 species of birds, 47 species of herpeto-fauna, 126 species of fish, and over 2,100 species of flowering plants.

The Nepalese portion of the TAL extends from the Bagmati River in the east to the Mahakali River in the west, and includes over 75 percent of the remaining forests of the Terai and the foothills of the Churia Range.

Map 1 below illustrates the vision of TAL and also shows the critical areas—two corridors, three bottlenecks and four protected areas—that WWF focuses on in the Nepal side of TAL.



Map 1: Critical areas—corridors and bottlenecks within Terai Arc Landscape—Nepal

¹ Royal Chitwan National Park, Parsa Wildlife Reserve, Royal Bardia National Park, and Royal Suklaphanta National Park in Nepal and Corbett National Park, Rajaji National Park, Sonanadi Wildlife Sanctuary, Kishanpur Wildlife Sanctuary, Dudwa National park, Katarniaghat Wildlife Sanctuary and Valmikinagar Wildlife Sanctuary in India.

Threats

The ecological landscape of the Terai is faced with an array of immediate threats endangering the very existence of its wildlife species and habitats. Not only is the long term viability of wildlife species and their habitat at stake, but also the sustainable future livelihoods of local communities. A thorough Root Causes Analysis (RCA)² was initiated in December 2002 and completed in June 2003 to help us prioritize the immediate threats and identify underlying issues—such as policies, institutional dynamics, and socioeconomic forces, including market forces and human actions—leading to biodiversity loss in the TAL. The RCA method explored biodiversity loss using a multidisciplinary and analytical approach that resulted in direct links between threats, strategy, and activity, helping ongoing TAL activities to become more strategic and targeted. The direct threats can be classified within two primary threats:

Biodiversity loss, particularly of megafauna and prey species, the primary drivers of which are

- Poaching and wildlife trade: the two groups with the greatest impact on biodiversity are the local poachers who hunt wildlife, and the middlemen from urban or village centers who create the demand in local sites by paying for wildlife parts as well as help with guiding, transporting, and providing of information. In most cases, middlemen are backed by a well-organized mafia and have considerable political clout;
- Human-wildlife conflict: as forest cover dwindles and prey populations decrease, competition for resources increases between people and wildlife, leading to encroachment by tigers, elephants, wild boars, and other species into inhabited areas, which result in livestock and crop depredation, property damage, and even human injury and death.

Habitat loss and fragmentation, including degradation of forest, undergrowth, and grasslands, the primary drivers of which are:

- Invasive species: one of the biggest factors for habitat degradation in the Terai Arc Landscape is the spread of invasive species such as water hyacinth (*Eichhornia crassipes*) and Banmara (*Lantana camara*). These species successfully establish themselves and overcome pre-existing native ecosystems. Impacts include decreasing productivity of pasturelands, loss of undergrowth in forests, shrinking grasslands, and obstruction of waterways and waterholes leading to scarcity of water;
- Unsustainable grazing in national forests: grazing in national forests is a common practice across the Terai Arc Landscape and is responsible for much of the loss of forest undergrowth. There are three underlying factors for this problem: the large livestock population (recently estimated at 4.5 million heads) which provides for dairy food, income, fuel, transport and plowing needs of the local communities; the inadequate size of landholdings and the lack of accessible grazing pastures; and the *de facto* open access conditions of national forests;
- Unsustainable harvesting of fuel wood and other forest products: use of fuel wood and other forest products, if regulated properly, are not inherently a risk to sustainability. However, the large quantities of fuel wood consumed by small scale industries in semi-urban areas

² RCA is an analytical and logical tool that enabled TAL to identify a set of factors that are the main drivers or causes behind environmental degradation and biodiversity loss in the landscape.

such as brick kilns, sugar mills, and resin producers, as well as teashops and small hotels, are taking a toll on the forests of the Terai Arc;

- **Land conversion:** agricultural expansion and encroachment continue unabated in the Terai Arc because boundaries and demarcations separating forestland and settlements are impermanent in nature. Other factors in land conversion include infrastructure development; and resettlement of landless people, freed bonded laborers, and settlers from the hills in or close to forest areas. These trends are exacerbated greatly by the lack of interdepartmental coordination amongst the Ministry of Land Reform and Management, Department of Forests, and Department of Roads.

Strategic Goals & Objectives

The goal for the entire Eastern Himalayas ecoregion is to conserve representative facets of biodiversity within habitat areas that are large enough to support the natural ecological and evolutionary processes that maintain the ecoregion. The Terai Arc Landscape program was initiated in July 2001 in order to restore and maintain wildlife corridors that link 11 protected areas between Nepal's Parsa Wildlife Reserve and India's Rajaji National Park. The objective of the Terai Arc Landscape Nepal (TAL- Nepal) is *to conserve the biodiversity, soils and watersheds of the Terai and Churia hills in order to ensure the ecological, economic and socio-cultural integrity of the region.* Forests connecting these protected areas are in various stages of degradation and fragmentation due to human population and poverty pressures. Restoring wildlife corridors will facilitate the dispersal and genetic exchange of wildlife populations, ensure the long-term survival of key endangered species, and provide ecological and socio-economic services integral for the well being of local communities.

The proposal submitted to USAID focused on seven components of this objective:

- Strengthen community forestry management
- Restore habitat
- Strengthen anti-poaching operations
- Promote sustainable livelihoods
- Enhance conservation education, communication and coordination
- Carry out research monitoring and evaluation
- Implement TAL strategic planning and program coordination

Collaborators/Partners

In order to meet these objectives, WWF Nepal program is working with a number of partners. These partners are from the government, donors, donor supported specific projects, and civil society organizations. These partners include

- Department of Forests, HMG Nepal
- Department of National Parks and Wildlife Conservation, HMG Nepal
- SAGUN (USAID)
- United Nations Development Program (UNDP)
- BISEP ST (SNV)
- Livelihood for Forestry Program (DFiD)

National and community level organizations with which WWF partners include

- Community forest users' groups
- Community forest coordination committees
- King Mahendra Trust for Nature Conservation (KMTNC)
- Eco clubs
- Buffer zone management councils
- District development committees
- Village development committees
- Nepal Red Cross Society

Summary: Period 10/01/04–9/30/05

This year witnessed the most unexpected political development in the country. On February 1, 2005, the king assumed political power, excluding all other political parties. This has generated strong and mixed reactions among the donor community. Some donors have suspended their programs in various sectors. Others are working with due caution, working to adopt activities to the changing conflict. Few development agencies are working in remote areas of the country, having been replaced mostly by humanitarian aid agencies.

Failure of governance has been marked by corruption, unaccountability, ineffective service delivery, troublesome bureaucratic practices, and increasing impoverishment in rural areas. Deeply rooted social, cultural, and economic discrimination against marginalized groups are still key threats in the society. This state of turmoil led by the Maoist insurgency has also affected conservation efforts in the country. Poaching of wild animals, habitat encroachment, and illegal logging have been on the rise as forest patrols made dangerous by the insurgency have been scaled back. The more than three decades of conservation work that WWF has achieved in the region is under serious threat. The WWF Nepal Program has held strategic meetings with senior government officials in His Majesty's Government of Nepal (HMG), Ministry of Forests and Soil Conservation (MFSC), and civil society organizations to identify issues and explore possible strategies and actions that might reduce these threats to forests and the species within them.

Despite the critical security situation throughout the country the program has succeeded in accomplishing the targeted activities with satisfactory results. Major activities carried out in this fiscal year were forest management, species conservation, sustainable livelihood development, conservation awareness generation, and policy and advocacy including partnership development.

Forest management

Forest management and corridor restoration included establishment of nurseries, production and plantation of seedlings of tree and non timber forest product species, facilitation of natural regeneration of degraded sites, preparation of community forest operational plans, and handover of forests to Community Forest Users Groups (CFUGs).

In TAL, protection against biotic interferences such as theft, encroachment, illicit felling, grazing, and hunting are being controlled through the involvement of local community members

in Community-based Anti-poaching Operations (CBAPO). The concept of CBAPO has been very successful, and 12 such institutions are now functional in the landscape. Anti-poaching operations have been mobilized effectively outside the protected areas along forest corridors in *Basanta* and *Khata* Corridors, *Mahadevpuri* and *Dovan* bottlenecks, and *Chitwan*, *Nawalparasi* and *Parsa* districts through involvement of local communities in close collaboration with District Forest Offices.

Another important intervention of the program was support for alternative energy. The installation of biogas, particularly those with attached lavatories, increased sanitation in the homestead areas, substantially reduced the household consumption of fuel wood biomass, and helped to reduce acute respiratory infections in women and children. Preliminary assessment of the impact of biogas indicates that support for the establishment of the biogas and improved cook stoves has saved fuel wood equal to the growing stock found in 102 hectares of forest every year.

Species Conservation

The most important activity carried out under the species program was the rhino count at Royal Chitwan National Park (RCNP). Rhino Count 2005 found a rhino population decline over the past five years, and opened a serious debate at the national and international levels about the future sustainability of the rhino population. Initial analysis has indicated that poaching has been the most important factor contributing to the population decline, but natural rhino mortality has also been significant. Monitoring of tigers, Bengal florican, and ungulates was also done during the reporting period.

The program has implemented a wide range of activities to strengthen protected area management and species conservation in TAL, including habitat management, anti-poaching operations, human-wildlife conflict mitigation, and research and monitoring of the wild animals. Specific achievements included the following:

- Management of 490 hectares of grasslands, and construction and renovation of eight waterholes in four national parks;
- One hundred and twenty-three kilometers of fire line and seven bridges and causeways in the protected areas were maintained, assisting the mobility of park staff and protection units conducting wildlife patrols and monitoring;
- Eight anti-poaching operation posts were renovated;
- Assistance was provided to protected areas for anti-poaching operations such as information networks formation and mobilization, field gear support, and logistic supports for mobile teams. Special strategic meetings were also held with senior government officials, security personnel, and park authorities to prepare the anti-poaching strategy, especially after the decline of rhinos in RCNP. An anti-poaching strategy for RCNP has been prepared;
- Construction of physical barriers and cultivation of alternative crops such as mentha to reduce the human-wildlife conflict;
- Organization of a regional workshop in Kathmandu to share experience on human-elephant conflict and mitigation measures among the regional countries;
- The CITES unit at DNPWC was supported.

Sustainable livelihood development

The TAL program supported several activities contributing to sustainable livelihood development during the reporting period:

- Development of community facilities in the New Padampur area in Chitwan where translocated people from the RCNP core area have been housed, including two drinking water and irrigation facilities, support for one school, and income-generating activities;
- Development of a livelihood mainstreaming strategy;
- Sustainable development activities included livestock management, alternative energy technology promotion, promotion of income generating activities, and enhancement of small scale physical infrastructure facilities;
- Establishment of agriculture-based income generation activities benefiting 1,654 farmers and their families;
- Development of marketing linkages for NTFP production, resulting in NTFP trade worth USD 70,000 during the reporting period. As many as 731 farmers' households benefited directly from this intervention.

Conservation awareness generation

To increase local stakeholder awareness of the importance of corridor restoration, and to mobilize community participation, the TAL program conducted and supported several activities ranging from eco clubs to community radio programs. The TAL program focused on training, extension, workshops, and information dissemination among local people and stakeholders. The program also supported central level coordinating bodies—such as the Project Executive Committee and the Project Coordination Committee—to ensure effective coordination and policy backups for program implementation.

Policy and advocacy

The TAL program made significant achievements in the policy arena during this reporting period. Following the endorsement of the Terai Arc Landscape—Nepal Strategic Plan a new core team has been formed, again headed by the Chief of Planning and Human Resources Development division of the Ministry of Forests and Soil Conservation to develop the partnership and business plan. Once again, the core team comprised members from key international institutions including UNDP, SNV, USAID, DFID, BISEP ST, and WWF Nepal Program, as well as representatives from MFSC, Department of Forests, and Department of National Parks and Wildlife Conservation. The Large Conservation Project management initiative of WWF-US and IBM has supported formulation of a business plan.

The program conducted a massive advocacy campaign to safeguard biodiversity in TAL in the face of planned oil exploration work in TAL. The threat has not been minimized, but the issue has been brought to the attention of conservation organizations, including the larger WWF network.

These achievements in the Terai Arc Landscape were made possible largely by the rapport that the TAL program has built with local communities and grass roots level organizations where the majority of activities were carried out, particularly community based organizations such as CFCC, CFUGs and CBOs. Additionally, the WWF Nepal Program initiated a new partnership

with the Nepal Red Cross Society to implement environment health related interventions. The program is constantly monitoring and analyzing the threats and risks generated by conflict, and works to make all interventions sensitive to the conflict.

The program opened a satellite office at Nepalgunj and archived important documents there. A field officer has been stationed in Chitwan to monitor the activities in RCNP and New Padampur areas. A field assistant stationed at Lamahi monitored the program activities there.

Highlights

Program planning

An extensive Logical Framework Analysis (LFA) of the TAL Program was developed. This plan was supported with a Monitoring and Evaluation (M&E) Plan. This has been a milestone in the history of WWF Nepal program, such that after the preparation of these plans all the program planning has been now mainstreamed according to the logframe. Similarly, an Adaptive Management Schedule (AMS) has been prepared for the TAL program. The process of preparation of LFA, M&E plan and AMS preparation included the participation staff from the field, WWF Nepal Program, and WWF-UK.

New partnership

Action learning results showed that biogas with attached lavatories have multiple positive impacts in the project sites. Therefore, the TAL program decided to enhance the installation of biogas in the critical areas. To support the process, WWF signed an MOU with Biogas Support program (BSP) Nepal for the promotion of biogas in critical areas. As per the MOU, WWF will develop 10,000 biogas units over a period of five years in the critical areas with the support of BSP Nepal.

The frontloading of SNV under the name of WTLB has been effectively implemented during this reporting period under the existing implementation framework of Terai Arc Landscape (TAL) Program in Kanchanpur, Kailali and Bardia districts. This program has been instrumental in developing a new partnership with district level partners, and supporting establishment of DFCC in these districts. Bardiya and Kanchanpur districts have already established a DFCC, and Kailali is in the process. This is the first time that TAL program went beyond critical areas and undertook the issue of inclusion and equity from the forest management with new partners and players.

Regional workshop

A regional workshop was organized to share experience with human-elephant conflict and mitigation measures among the south Asian countries.

Rhino Count 2005

Rhino Count 2005 has been one of the most important activities carried out under the species program. The count was done in RCNP, and was a very intensive task using 25 elephants and 75 persons every day for more than one month. The 2005 count found only 372 animals, compared to the 544 found in RCNP in 2000. These results have opened a serious debate at both the national and international levels on the future sustainability of the rhino population. The eastern

sector of the park has a comparatively smaller population than the central and west. The loss is being attributed to poaching, decreasing rhino habitat, natural mortality due to natural succession, and invasion of alien species.

Monitoring of wild animals

This year the program began reassessing tiger population numbers obtained in 2001. Tiger monitoring using camera traps has been completed in RSWR, and is ongoing in RCNP.

While the security situation did not allow the counting of Bardiya rhinos, rhino monitoring was conducted at the Karnali flood plain of RBNP and RSWR. Monitoring of rhinos at Shukhibahar area has been conducted during the reporting period. The objective of rhino monitoring is to assess habitat use and movement pattern of rhinos in their habitat.

Monitoring of the Bengal florican was done at RSWR, RBNP and RCNP. Ungulate monitoring was conducted at two bottlenecks outside the protected areas in the Khata and Basanta areas.

Objective: Restoration of key wildlife corridors linking protected areas in the Terai Arc Landscape

Activity 1: Strengthen community forestry management

Community forestry has been identified as one of the major institutional vehicles for mobilizing local communities in restoration and sustainable management of the degraded corridor forests. Communities have well realized the benefits of the community forests, and demand for handover of forests to communities is on the rise. Capitalizing on the interest of local communities, and in order to motivate them to restore and manage the degraded corridors, the TAL program has been providing technical and financial support for institutionalization of Community Forest User Groups in collaboration with the respective District Forest Offices (DFO). The TAL program facilitates mobilization at the community level to organize users and make them aware of the benefits of the sustainable management of forest resources. The program also provides necessary technical and financial support to DFO for carrying out the rigorous inventory of forest resources, and for preparation of the operational plans of CFUGs. This partnership with DFO has been instrumental in facilitating CFUG formation and handover.

The combined effort of the program, District Forest Offices and local communities resulted in satisfactory progress on CFUG formation, operational plan preparation, and forest handover activities during this fiscal year. A total of 2,429 hectares of forest have been handed over to 46 CFUGs in corridor and bottleneck areas. Altogether 5,193 households benefited in terms of institution building, ownership of forest resources, and from supplies of forest products through sustainable management of the forest resources. Logistical support was also provided to the newly formed CFUGs; along with forest handover, the program supported revision of operational plans of seven existing CFUGs in the Lamahi and Dovan bottleneck areas. Forty-six new CFUGs were registered with DFO and five with the park warden.

Community forestry in TAL contributes not only to sustainable management of forests, but has also been instrumental in promoting good governance and democratic practices at the grass root levels through promotion of participatory decision making and equitable benefit sharing. Moreover, CFUGs have become key grass roots institutions, taking care of natural resource management and development activities while local elected bodies are long absent due to the ongoing conflict and political instability.

During this reporting period, institutional capacity of the 22 CFUGs was enhanced through a variety of training sessions organized for the executive members of those institutions. Training ranges from development of managerial capacities (participatory planning and monitoring) to book keeping. Forty percent of the 1,600 members who participated in program-led training were women.

The TAL Program facilitated networking between CFUGs to form Community Forest Coordination Committees (CFCC), institutions intended to support, coordinate, facilitate, and monitor the community forestry activities and community development initiatives. During this fiscal year, three new CFCCs were formed in the Basanta Corridor and Mohana area of Kalilai, and in the Laljhadi area of Kanchanpur.

In a bid to establish the district-level apex body for local institutions, and to promote decentralized decision making systems for the management of district forest resources, District Forest Coordination Committees were formed in Bardia and Kanchanpur districts. As the DFCC was formed at the end of the fiscal year, no significant initiation of the institution could be reported. Absence of local elected government bodies creates questions about the effectiveness of the DFCC.

Activity 2: Habitat restoration

The rich habitats within protected areas of TAL that support endangered species—such as the one-horned rhinoceros, Royal Bengal tiger and Asiatic elephant—are vulnerable to change and degradation. This includes reduction in grassland habitat from the expansion of invasive species and conversion to forest through natural succession; and falling water levels which can result in inadequate waterholes. On the other hand forests outside the protected areas, which can provide corridors between protected areas for wildlife movement and genetic exchange, are under threat from forest conversion and inappropriate anthropogenic activities. Restoration of degraded habitats both within and outside of protected areas is considered a priority activity by the program.

Activity 2.1: Habitat management

In order to provide scientific backing to grasslands management interventions, a vegetation assessment was conducted in the grasslands of Royal Chitwan National Park and Royal Suklaphanta Wildlife Reserve with establishment of research plots, seasonal collection of data and analysis. This vegetation assessment and other studies provided substantial scientific backing for treatments based on species-specific grassland management interventions.

In an effort to restore the fragile grassland habitats and to ensure the long term survival of grassland dependent species, the program supports grassland management activities such as burning, cutting and uprooting of undesirable species or a combination of these based on the researcher recommendations. During this reporting period, a total of 490 hectares of grassland was managed in the four protected areas (RCNP: 220 hectares; RSWR: 200 hectares; RBNP: 50 hectares; and PWR: 20 hectares). There has been a 50 percent reduction in invasive species in the managed grasslands, and reported sightings of deer species have increased in the Adhabhar area of RCNP.



Grassland management in RCNP, applying uprooting treatment to reduce threat of invasive species

Post-management use of habitat by wildlife is being monitored in 12 managed habitats of RCNP: seven grassland habitats (627 sightings) and five wetland habitats (284 sightings). Information gathered this year will provide the baseline for future comparison and assessment.

Activity 2.2: Restoration of degraded forests

Restoration of degraded corridor forests mainly involves replanting degraded forest lands, and promotion of natural regeneration by controlling overgrazing with trench and fence construction. Management support was provided to 17 community managed and District Forest Office forest nurseries in order to supply 642,000 seedlings for plantation.

Plantation on degraded forest areas and fallow lands is a major activity for restoration of corridors. Four hundred and forty-six hectares of degraded forest land were replanted during the monsoon of 2004, mostly in Basanta, Mohana and Laljhadi areas. At Khata, major plantation was carried out in the encroachment evacuated sites while the NTFP seedlings were planted in the community forests. In Basanta, Mahadevpuri, Lamahi and Laljhadi area, plantations were carried out in the handed over or proposed community forest areas. Plantations take place only during monsoon season; since monsoon starts late in the western Terai, planned plantation activities for this fiscal year will be completed by September 2005 and will be reported in next progress report.

The rate of natural regeneration in the forest of Terai is generally high. Therefore, in areas which are not severely degraded and can be restored through strict protection, trenches and fences were constructed. Trenches and fences serve as barriers to grazing cattle, effectively controlling a major factor obstacle to natural regeneration. Trenches and fences have also been found to be effective fire breaks, and prevent further degradation in this way as well. Because natural regeneration is an ecological process, it safeguards the genetic diversity, species diversity, and ecosystem diversity of terrestrial ecosystems. During this reporting period natural regeneration was promoted in 9,272 hectares of degraded forest area. This achievement far exceeds the target because of the high participation of people in making trenches.

Preliminary analysis of the latest satellite images using GIS reveals that there has been significant change in the vegetation cover in the intervened areas of corridors and bottlenecks. However, a detailed study and rigorous ground verification is essential.

Activity 3: Strengthen anti-poaching operations

Poaching of endangered species has become a serious challenge to conservation efforts in protected areas, their buffer zones, and the corridors of TAL, and the current security situation has further aggravated conservation efforts. TAL program is consolidating anti-poaching operations through multi-pronged strategies such as mobilization of community based anti-poaching operation units outside the protected areas, providing mobility support to protected area anti-poaching operation units, and strengthening information networks and organizing awareness-raising events among stakeholders and communities. These efforts are yielding some encouraging results.

Activity 3.1: Provide support for anti-poaching operations

The innovative mobilization of community based anti poaching operation units in the corridors has been proven very effective. Twelve CBAPOs are smoothly functioning in close coordination with the District Forest Offices. As a part of the capacity building, 57 CBAPO members were trained on the CBAPO concept, operational systems, their roles and responsibilities, and prevailing laws and by-laws pertaining to CBAPO. A CBAPO workshop attended by 165 of its members discussed poaching, illegal logging and encroachments, and concluded with strategic decisions to make the operations more effective.

During the reporting period CBAPOs have removed encroachment from 103 hectares of forest areas, dismantled 163 traps set for birds and mammals in national forests, and confiscated 5,462 cubic feet of timber from illegal loggers (generating fines of USD3,100). CBAPOs have also rescued 36 individual wild animals in separate incidents. Motivated by the awareness-raising campaigns of the CBAPOs, two poachers handed over their poaching tools to CBAPO members and promised not to get involved in such activities in the future.

Despite the enthusiasm and achievements of the CBAPOs, there is a need to assess their and enhance their effectiveness and to replicate it in other program areas on a wider scale.

The TAL program has also been supporting anti-poaching operations in four protected areas. During this fiscal year, anti-poaching operations became more strategic with effective mobilization of local informers at strategic locations for surveillance and regular sweeping operations (133), camping operations (10), and patrolling (97).



Figure 1. Number of rhinos killed by poaching (1994 - 2005)

As the result of the joint undertaking of anti-poaching units by protected areas and the Royal Nepalese Army, the rate of rhino poaching stabilized in RCNP; rhino poaching would have likely increase at an alarming rate had this strategic joint partnership not been created.

Protected areas have also succeeded in controlling illegal activities to a larger extent. Anti-poaching operation teams seized from poachers three rhino horns, two tiger skins, six kilograms of tiger bones, and a homemade gun. Seventy-two poachers—including 55 rhino poachers and six tiger poachers—were apprehended by anti-poaching operation teams in RCNP. Legal measures were taken against 119 offenders by RCNP (17 alleged offenders are in custody, 14 are under investigation, 27 are on trial, and 61 were fined and released). In addition, anti-poaching operation teams in four protected areas have confiscated 2,113 cubic feet of timber, 36 carts, 72 bullocks, one tractor, one motorbike, four boats and 18 Sal wood logs from illegal loggers and poachers during this reporting period. Four hundred and two traps set for wild animals were dismantled during sweeping operations.

During this fiscal year, 55 protection unit staff members and 20 junior staff members were trained in anti-poaching operations. In addition, since elephant stable staff from protected area offices play a crucial role in anti-poaching operations during patrolling, monitoring and sweeping operations, 26 elephant stable staff members were trained on anti-poaching operation strategies.

Support for maintenance of 238 kilometers of fire lines (120 kilometers in RCNP, 20 kilometers in PWR, 50 kilometers in RBNP, and 48 kilometers in RSWR) and renovation or construction of 31 bridges and causeways on fire lines have substantially helped the mobility of protected area staff during regular management activities, patrolling, and wildlife monitoring.

Activity 3.2: Strengthen wildlife trade monitoring and CITES implementation

Along with supporting anti-poaching activities at both the protected area and community levels, the TAL program has a goal to make stakeholders and communities aware of wildlife trade issues. To this end, support was provided to DNPWC to monitor wildlife trade and implementation of CITES. DNPWC was provided with financial, human resource, and logistical support for coordination and database management. Assistance was also provided for translation of the CITES bill, updating publication materials on CITES, and conducting sensitivity training.

Activity 4: Promote sustainable livelihoods

Root causes analysis of biodiversity loss and environmental degradation in TAL reveals that livelihood issues are inextricably linked with conservation. Thus, sustainable development constitutes a major component of the program. In addition, the program has adopted a sustainable livelihood framework and strategy while designing and implementing the activities. Sustainable livelihood development activities are aimed at reducing pressure on natural resources by providing alternate livelihood opportunities to the local communities, as well as mobilizing them in conservation activities. Thus, the program has emphasized the definition of clear linkages between livelihood development and its impact on conservation.

Activity 4.1: Alternative income generation for livelihood

The TAL program aims to provide a source of alternative income generation for the targeted groups and identified poor through forest based, agro based and off-farm income generation activities. During this reporting period, 835 people were provided with skill development training on NTFP management: collection, cultivation, harvesting, processing, and storage. After receiving training and equipment support, 20 households of RSWR BZ have begun rope making enterprises. Eleven people from CFUGs of Khata corridors were trained in cane furniture making. Cultivation of non timber forest products and high value crops was promoted both on private land and in community forests. In order to support NTFP farmers and CFUGs for cultivation, a total of 410,000 NTFP seedlings were produced in 11 multipurpose nurseries. As the result of technical and seedling supports from the program, NTFP and high value crops were cultivated on 70 hectares of private land by 65 farmer households. Similarly, CFUGs have cultivated NTFPs in 55 hectares of community forests, benefiting more than 205 households.

Linkages have been established between farmers, collectors, CFUGs, and cooperatives, and the NTFP and high value crop traders at the local and national markets. As the result of enhanced marketing linkages, trade in the amount of 190 megatons of NTFP and high value crops worth USD 60,000 moved to local and national markets. This trade deal has benefited 1,589 households and ten CFUGs.

Because of the predominant agrarian rural economy in the project sites, activities such as vegetable farming, piggyery, goat keeping, bee keeping, and fisheries were supported during this fiscal year. Program support for income generating activity management was provided mostly as startup capital for income generating activities. These activities were also supported with technical training activities. During this reporting period 1,290 households were supported in agriculture-based income generating activities, and 457 people were supported in agriculture-based IGA skill development.



NTFP promotion - citronella cultivation in Baijanath Buffer Zone CFUG of RSWR BZ

A total of 22 women from the Tharu indigenous community were provided with sewing and cutting training along with sewing machines. In addition, 15 other households were supported for off-farm income generating activities such as tailoring, retail shops, and rickshaw maintenance.

Activity 4.2: Reduce pressure on forest resources through alternative energy use

TAL promotes energy efficient technologies like toilet-attached biogas plants and improved cooking stoves as a means to reduce the pressure on forest resources. Biogas plants have been proven to conserve fuel wood, saving 4.5 megatons of fuel wood annually³. Toilet-attached biogas plants have been effective in reducing pressure on forests for fuel wood, and have had a positive impact on sanitation (acute respiratory infections, especially among women, have decreased). For this reason WWF Nepal Program has signed a memorandum of understanding with Biogas Sector Partnership Nepal, a nonprofit Nepali NGO, for the promotion of 10,000 toilet-attached biogas plants in critical areas of TAL by 2009.

Installation of 575 toilet-attached biogas plants and 2,600 improved cooking stoves has substantially contributed to the reduction of fuel wood consumption, saving 7,878 megatons of fuel wood annually (a cumulative 13,878 megatons since inception). Thus, more than 102 hectares of forest has been spared from otherwise clear felling for fuel wood. On the other hand, despite proven impact of biogas plants, they are not affordable to the majority of poor households in the critical areas of TAL. Improved cooking stoves have been promoted as a viable and energy efficient technology suitable for poor households. Promotion of improved cooking stoves also includes training of local technicians for ensuring sustainability in promotion and maintenance of improved cooking stoves in future. A total of 51 local technicians (15 men

³ Biogas Support Program, SNV Nepal

and 36 women) were trained during this fiscal year and are supporting improved cooking stove installation in the communities.



A biogas plant owner

It is obvious that alternate and energy efficient technologies promoted by TAL program have had a positive impact on reducing the fuel wood consumption among the households residing in the critical areas. But there remains a large demand for fuel wood as well as timber from urban and industrial sector such as brick factories. A recent study on fuel wood demand in critical areas (WWF Nepal Program 2005) has clearly pointed to the need for addressing the issue of fuel wood demand by the urban sector. The study clearly pointed to the need to provide alternate livelihood opportunities to the households that are solely dependent on wood collection and selling. Thus, the program has been strategizing its interventions on livelihood enhancement to effectively target the households that are solely dependent on the forest for daily sustenance.

Activity 4.3: Minimize grazing pressure on the forest

Overgrazing by more than 4.5 million head of livestock is identified as one of the major causes of forest degradation in TAL. Thus, TAL Program has been supporting local communities in controlling grazing in both national and community forests through construction of trenches and fences. Support for construction of kanzi houses also helps local communities take enforcement actions against illegal grazers. During this fiscal year, the program supported construction of 16 kanzi houses in Lamahi, Khata, and Laljhadi to support local communities in taking enforcement actions against illegal grazers.

Integrated livestock management such as stall feeding, breed improvement, and veterinary extension services activities were also supported. In order to enhance veterinary extension services at the community level, nine local youth were supported for a six month veterinary course at an institute recognized by the Center for Technical Education and Vocation Training (CTEVT) of HMG Nepal. The support was aimed at establishing a sustainable mechanism of veterinary extension service at the community level; the trained youths will serve their communities, and at the same time self-employment opportunities will be secured for them.

The program during this reporting period also supported improvement of breeds for the promotion of productive livestock rising. Eighteen improved breeds provided to CFUGs and income generating groups benefited 1,490 households.

Activity 4.4: Minimize human-wildlife conflicts

As the use of biological corridors by megafauna species increases, there is also an increase in human-wildlife interactions and conflicts. To reduce vulnerability of the local residents to crop and livestock damage by wildlife—and resulting retaliatory killings of wildlife by the local communities—TAL program is supporting local communities in adopting preventive and mitigation measures.

During this fiscal year BZMC of RSWR Buffer Zone was supported in construction of 12 kilometers of trenches with bio-fence, and three BZUCs of RBNP Buffer Zone were supported in the maintenance of 98.8 kilometers of trench. Likewise, 36 watch towers were built in the communities of the impact zone of RSWR and RBNP Buffer Zones, for surveillance against movement of wildlife towards crop fields. Maintenance and construction of these facilities in and around buffer zones will prevent wild animals from entering farmlands. Thus, vulnerability of the communities in impact zones to crop and livestock depredation by wildlife has been reduced. The watch towers have been quite helpful for the communities for keeping vigil on wildlife movement to farmlands. Construction of watch towers has benefited 2,000 households by protecting crops in more than 250 hectares of farm land from depredation by wildlife.

The local communities in wildlife-impacted areas of buffer zones and corridors have adopted Mentha cultivation as an effective measure for mitigating crop depredation by wildlife. Seven hundred and fifty-five people have been provided with technical knowledge on Mentha cultivation, harvest, and processing during this fiscal year. Two hundred and fifteen households have cultivated Mentha on 19 hectares of land. Facilities maintenance at three plants and installation of one distillation plant have been carried out during this fiscal year. Seven hundred and fifty kilograms of Mentha oil produced in the area and sold to local and national markets earned USD 5,600 from the trade for 75 farmers and their households.

Although buffer zone management councils are providing nominal relief from human casualties by wildlife attack, effective and formalized relief mechanisms (both government supported and community-based) are lacking for crop depredation and property damage by wildlife. The TAL program has begun to strategize human-wildlife conflict mitigation through learning and experience sharing. Case studies on nature and intensity of conflict in corridors were developed, and a regional workshop was organized on to share experiences in human-elephant conflict and mitigation measures. Delegates from India, Sri Lanka, Bangladesh, Malaysia and Thailand participated in the workshop.

Activity 5: Enhance conservation education, communication and coordination

Conservation education and awareness generation activities were focused on varied levels of audiences to convey conservation as well as programmatic messages. Community organizations such as CFUGs, CFCCs, BZMCs, BZUCs, and student groups constitute key target groups for

conservation education and awareness activities. Focused activities such as workshops, interactions, exposure tours, Non Formal Education (NFE), publications, and extension materials were carried out intensively.

Eco clubs were mobilized for extension of conservation awareness among students, their families, and villages. During this fiscal year, 41 new eco clubs were formed. Altogether, 139 eco clubs are actively involved in conservation awareness activities in Terai Arc Landscape. These eco clubs are affiliated in four Eco Club Networks. These eco clubs and networks were supported in carrying out extracurricular activities related to conservation awareness generation. The eco clubs conducted more than 375 activities during this fiscal year. Involvement in these activities has substantially enhanced level of conservation awareness among the students. Positive changes in attitude and behavior of the students are evident; for example, eco club members spontaneously organized an intensive campaign on community forest awareness among users of 19 CFUGs in Lamahi. Eco club members oriented and motivated users on sustainable collection of forest products and conservation measures.

NFE has been proven quite effective for extension of conservation awareness. During this reporting period, 39 adult women benefited from basic and post literacy NFE classes. NFE classes were utilized for disseminating conservation education to the participants. In addition, four male and 17 female herders deprived of schooling opportunities were provided with NFE through Gothala education. Twenty-six boys and 72 girls deprived of schooling opportunities were also provided with NFE classes.

Numbers of interactions and workshops were organized for CBOs and specific audiences for imparting conservation messages focused on specific conservation issues. More than 460 people participated in the *Gothala* workshop, the *Agharia* workshop and the community forest interaction workshop. Extension activities such as celebrations, cultural programs, and street theater were designed to reach the general public. During this reporting period, extension activities effectively reached more than 10,000 mass audiences. In addition, a week-long Save the Rhino Campaign 2005 was conducted on the occasion of Biodiversity Day (May 22, 2005) in the RCNP Buffer Zone. The campaign was successful in drawing the attention of the buffer zone communities to the conservation of the rhino and its habitat in the buffer zone areas. The campaign was successful in disseminating its messages even to the poorest of poor like *Bote*, *Majhi* and *Musahar*. Moreover, this campaign succeeded in securing a commitment from the buffer zone communities for rhino conservation.

Support for the *Bhuparidhi* fortnightly radio program was continued during this fiscal year. More than 100 listener clubs of the *Bhuparidhi* fortnightly radio program have been formed spontaneously. Documentary films on Ramsar sites and the wetlands of Terai were prepared and broadcasted from Nepal Television on the occasion of Wetland Day. A television spot was also prepared on conservation efforts in RCNP.

A conservation picture book, TAL fact book, and the TAL—Nepal Strategic Plan (including its summary) are major publications of the TAL program during this reporting period. Project field offices have published four volumes of the quarterly newsletter *Kael Pahura*.

Interaction workshops were also used as forum for disseminating information on conservation issues and program initiatives in TAL. More than 80 environmental journalists were oriented on conservation issues and program initiatives in TAL. Likewise, a public hearing on objectives, activities, achievements and implantation modality including resource investment of TAL program was organized. This workshop proved to be highly fruitful to disseminate information to different levels of target groups ranging from CBO members to journalists and to maintain transparency at project level.

At the central level, Project Coordination Committee (PCC) meetings were held at regular intervals to address the issues of implementation. Project Executive Committee (PEC) meetings were also conducted twice during the reporting time as stipulated. A TAL-level bimonthly coordination meeting has been initiated to address the issues at program level. Bimonthly coordination meetings are ongoing at regular intervals and issues are being raised and addressed. Similarly, transborder coordination at the field level is very effective. Transborder grazing and apprehension of culprits at the transborder level have been established at the community level in Basanta.

The program emphasized strengthening coordination with partners and stakeholders both at national and local levels. A number of meetings and workshops were held with national and local level partners such as Ministry of Forests and Soil Conservation, DoF, DNPWC, UNDP, DFID, SNV/N, IDE, etc. for partnership and program development and coordination.

Activity 6: Research, monitoring and evaluation

Gaps in understanding of the process and impact of several issues were identified during the preparation of broader strategies for TAL. Using the list as entry point, the program has been undertaking research, monitoring and scientific database management for providing knowledge backups for planning and interventions for the program.

Monitoring of the wild animals in the protected areas and corridors was carried out during the reporting period. The program has begun a reassessment of the tiger population in TAL, using a camera trap technique in RSWR and RBNP. Tiger monitoring at RSWR revealed that there are 18 tigers of all sex and age in an area of 157 square kilometers, with a density of 11 tigers per 100 square kilometers in the effective sampled area. The work is ongoing at RCNP. As the security situation did not allow the counting of Bardiya rhinos, rhino monitoring was conducted at Karnali flood plain of RBNP, RSWR, and *Sukhibhar* area of RCNP. The objective of monitoring is to assess habitat use and movement pattern of rhinos in their habitat.

Monitoring of Bengal florican was done at RSWR, RBNP and RCNP. The monitoring of ungulates was done at two bottlenecks outside the protected areas in Khata and Basanta area.

The program conducted several research studies on issues of firewood, grazing management, and the relationship between population pressure and management of natural resources. The program supported the Department of Forestry in analyzing the forest cover change between 1991 and 2001. A programmatic GIS database is being managed and updated. In addition, the program

strengthened its monitoring system. An adoptive management schedule (AMS) has been developed for the program, and a logframe with output and indicators linked with monitoring plan has been developed.

Major research studies carried out by the program in this year are as follows:

- Study on demand and supply of fuel wood in critical areas in TAL
- Development of grazing management plans in TAL
- Development of a model of community forestry and governance in TAL
- Analysis of demographic dynamics in TAL
- Development of an ecotourism strategy and plan for PWR

The program has begun strengthening its monitoring component and management of its scientific data base. The database includes socioeconomic, spatial, and biological data. Spatial data for the entire landscape and site level data for the immediate intervention sites—five critical areas—were collected and stored using remote sensing and GIS technologies.

A new dataset for the critical area has been acquired and is being analyzed. The forest cover change analysis with DOF has shown that there has been a general improvement in the rate of forest degradation in TAL compare to ten years earlier.

The tiger action plan is under review. A working group for developing elephant and swamp deer action plans continues work during this reporting period.

Activity 7: Implement TAL strategic planning and program coordination

Soon after the endorsement of Terai Arc Landscape—Nepal Strategic Plan, a new core team formed headed by Chief of Planning and Human Resources Development division of Ministry of Forests and Soil Conservation. The objective was to develop the partnership and business plan based on the broad strategies endorsed last year. Once again, the core team was represented by members from key international institutions like UNDP, SNV, USAID, DFID, WWF Nepal Program, and representatives from MFSC, Department of Forests, Department of National Parks and Wildlife Conservation, and BISEP ST.

The core team conducted several working sessions and produced the framework to translate the strategies into actions. In this process, a comprehensive logistical framework for a strategic plan has been developed; activities were identified and verified with concerned partners. The large conservation project management initiative of WWF-US and IBM has supported the formulation of a business plan. A massive discussion has been undertaken with the partners during the formulation of the partnership plan and business plan, a financial model of the business plan has been completed, and the partnership plan is at its final stage.

During the strategic plan development process, strategies were developed to address the root causes of forest and environmental degradation in TAL using Root Cause Analysis (RCA) as a tool. The strategies formulated were then grouped and seven program areas were identified for the purpose of future partnership building and implementation in the field. These strategies were

further refined to address the direct and underlying causes and the policy and enforcement gaps therein. The seven program areas identified are

- Policy and Advocacy
- Institutions and Coordination
- Sustainable Forest Management
- Sustainable Development
- Species and Ecosystems Conservation
- Churia Watershed Conservation
- Awareness and Education

However, during the formulation of the partnership and business plan, these program areas have been clumped into five areas. All the activities are proposed to address the identified strategies, which are in turn crafted to address the root causes identified during the Root Causes Analysis. The front loading by SNV to the forthcoming WTLCP has been effectively implemented during the reporting period. Earlier, a working arrangement was made among the three partners (MFSC, WWF and SNV) to begin work in western Terai with the SNV share of committed budget for Western Terai Landscape Complex Project (WTLCP) as front loading. This front loading has been implemented under the existing implementation framework of Terai Arc Landscape (TAL) Program in the western part of Nepal's Terai Arc Landscape, specifically in the Kanchanpur, Kailali, and Bardia districts.

Progress Table

Benchmark	Output	Status
Objective: Restore key wildlife corridors to link protected areas in the Terai Arc Landscape		
<i>Activity 1.1: Establish and institutionalize community forest user groups</i>	<ul style="list-style-type: none"> • 43 Community Forest User Groups formed and legalized • 45 Operation Plans of CFUGs prepared and 2,429 ha forest handed over to 45 CFUGs • Three CFCCs formed in Basanta and Laljhadi and registered with District Administration Offices 	Completed Completed Completed
<i>Activity 1.2: Build capacity for community forest user groups</i>	<ul style="list-style-type: none"> • 30 training events enhanced technical and institutional capacity of CFUGs in sustainable forest management • 194 CFCC and CBAPO members shared experiences and gained knowledge on CF management and organizational development from seven exposure tours • Local communities are empowered to take care of natural resources management and community development activities and their participation increased in conservation 	Enhanced Enhanced Enhanced
Activity 2: Habitat restoration		
<i>Activity 2.1: Improve protected area management</i>	<ul style="list-style-type: none"> • 490 ha of grasslands managed in RCNP, RSWR and RBNP • Post management monitoring (concentration in and use of habitat) initiated and baseline established in RCNP 	Completed Initiated
<i>Activity 2.2: Restore degraded forests along corridors and bottlenecks</i>	<ul style="list-style-type: none"> • 642,000 forest tree, NTFP, fruit and fodder seedlings/saplings produced and distributed for plantation • 515 ha of degraded forests under restoration through plantations • 1,610 ha of degraded forest restored through natural regeneration 	Completed Exceed target Exceed target
Activity 3: Strengthen anti-poaching operations		
<i>Activity 3.1: Strengthen anti-poaching operations in protected areas and CBAPOs in corridors and bottlenecks</i>	<ul style="list-style-type: none"> • Community-based anti-poaching operations fully functioning in Basanta and Khata corridors, Chitwan (outside the protected area) and Parsa (outside the protected area) • Effective and efficient anti-poaching operations in four protected areas • Rate of rhino poaching stabilized in RCNP, 55 rhino and 6 tiger poachers arrested by APO team in RCNP 	Completed Improved Improved
<i>Activity 3.2: Strengthen CITES implementation</i>	<ul style="list-style-type: none"> • Strengthened CITES unit at DNPWC through capacity building, training for field level enforcement staff on wildlife poaching and trade • Two CITES trainings conducted for enforcement in protected areas and one orientation program held for police, custom and judicial officials • Management of database on CITES and wildlife traders and trade routes initiated 	Completed Completed Initiated
Activity 4: Promote sustainable livelihoods		
<i>Activity 4.1: Enhance alternative income generation of the local communities</i>	<ul style="list-style-type: none"> • 215,000 NTFP seedlings produced in nine sites and distributed for cultivation in private land and community forests • 731 households benefited from NTFP based income generation • 35 households benefited from off-farm IGAs • 2,212 households benefited from IGAs packages 	Completed Completed Completed Completed
<i>Activity 4.2: Reduce pressure on forests through promotion of alternative energy</i>	<ul style="list-style-type: none"> • 575 biogas and 2,600 improved cooking stoves installed in households • Technical capacity of 8 local resource persons developed for construction and maintenance of biogas plants and ICS • Fuel wood demand study completed 	Completed Completed Completed

<i>Activity 4.3: Minimize grazing pressure on the forests</i>	<ul style="list-style-type: none"> • 17 CFUGs supported with breeding bulls for breed improvement benefiting 1,500 households • nine local youth provided with advance training on veterinary services • Study on grazing finalized 	<p>Completed</p> <p>Completed</p> <p>Piloting of community-based grazing management plan not completed</p>
<i>Activity 4.4: Minimize human-wildlife conflict</i>	<ul style="list-style-type: none"> • 215 households cultivated Mentha on 19 ha land and 75 households earned USD 5,600 from Mentha oil trade • Physical barriers to and surveillance of wildlife movement towards crop field reduced vulnerability of more than 2,000 households 	<p>As per annual target completed</p> <p>As per annual target completed</p> <p>Human-wildlife conflict mitigation strategy not developed</p>
Activity 5: Education, communication and coordination		
<i>Activity 5.1: Generate conservation awareness</i>	<ul style="list-style-type: none"> • 14 awareness generation events organized for local communities • Existing 82 eco clubs strengthened and an additional 20 new eco clubs formed • 39 local women benefited from basic and post literacy classes • 119 children deprived of formal school education benefited from NFE 	Completed as per annual target
<i>Activity 5.3: Systematic coordination mechanism</i>	<ul style="list-style-type: none"> • TAL Strategic Plan core team functioning effectively and contributing to implementation plan preparation • Strengthened systematic coordination mechanism in place • Steering Committee, Project Executive Committee (PEC), Program Coordination Committee (PCC) functioning effectively 	<p>Enhanced</p> <p>Completed</p>
Activity 6: Research and monitoring		
<i>Activity 6.1: Obtain GIS mapping and ground truth results</i>	<ul style="list-style-type: none"> • GIS-based biological and socioeconomic database updated • Vegetation at site level monitored and vegetation monitoring protocol for TAL developed 	<p>On track</p> <p>Completed</p>
<i>Activity 6.2: Wildlife monitoring</i>	<ul style="list-style-type: none"> • Baseline information of flagship species such as the Bengal tiger and the one-horned rhinoceros established through rhino count and camera trapping 	Regular
<i>Activity 6.3: Establish baseline in socio-economic condition</i>	<ul style="list-style-type: none"> • Study on demand and supply of fuel wood in critical areas in TAL finalized • Study on grazing finalized • Development of model of community forestry and governance in TAL • Analysis of demographic dynamics in TAL 	All finalized
<i>Activity 6.4: Monitor TAL activities</i>	<ul style="list-style-type: none"> • Monitoring and Evaluation Plan prepared along with log frame and integrated with AMS • 29 community members and DFO staff trained on participatory monitoring • Regular monitoring system in place 	<p>On track</p> <p>On track</p> <p>Mid-term evaluation not held</p>
Activity 7: Strategy planning and program coordination		
<i>Activity 7.1 Strengthen partnership and coordination</i>	<ul style="list-style-type: none"> • Development of TAL Partnership Plan and Business Plan • Strengthen and broaden partnership for TAL. 	<p>On track</p> <p>On track</p>

Next Steps

The program has been running in the fourth and final year of its first phase. Thus, consolidation of ongoing activities and ensuring sustainability of the achievements made will be a major focus of the program in the next fiscal year. Assessment of impact of the program and designing the project for the next phase will be on the agenda for the coming year. In general, programmatic and managerial steps of the program at a strategic level for FY06 are as follows:

- Conduct mid-term evaluation of first phase of the program;
- Design program and prepare financial plan for next phase based on impact evaluation of first phase;
- Major focus of the program will be on consolidation of ongoing activities through enhancing PCM and adoption of AMS. Program monitoring and database management at the center and project level will be enhanced. Action research will be emphasized focusing on institutionalization of learning from program implementation;
- Focus on and strategize program interventions for ensuring sustainability of achievements at the ground level;
- Mainstream sustainable livelihood approach and strategy in program designing, planning and implementation, while ensuring its clear linkage with the conservation goal of the program;
- Establish clear and strong alignment of TAL program targets and outputs achievements with the global and ecoregional targets;
- Integrate program components and output achievements to ensure explicit linkages among them, thereby contributing to the conservation goal of the program;
- Establish and put into operation TAL implementation mechanisms through finalization of the Implementation Plan of TAL—Nepal Strategic Plan, and fostering strategic partnerships.

Success Stories

Active participation of the local communities in corridor restoration activities is the major success of the project. Local community contribution to these activities has accounted for more than 40 percent of the project cost. In addition, wildlife monitoring in corridors revealed the presence of and use by flagship species such as tiger, rhino and elephants, which apparently indicates that the corridors are functionally under restoration.

The trend of rhino poaching stabilized in RCNP. Absent the joint efforts of all stakeholders, poaching of rhino could have continued to increase to an alarming level. In this fiscal year, 55 rhino and six tiger poachers have been detained in RCNP. The project support for mobilization of the local informant network has been highly instrumental for surveillance against wildlife poachers and traders. During this fiscal year, the anti-poaching operations team of RCNP held a rhino horn trader with his gang. Pemba Lama, alias Yakche Sherpa, confessed in custody that he had sold 20 rhino horns. This success is attributed to authentic information and immediate action undertaken by anti-poaching operations team.

Meanwhile, anti-poaching operations in protected areas have been strengthened significantly. For example, 151 sweeping operations were carried out in RCNP, RBNP and RSWR, in which three rhino horns, two tiger skins, and six kilograms of tiger bones were confiscated; 402 traps were dismantled; nine fishing boats, 2,133 cubic feet of timber, one car, one tractor, one motorbike, and 36 bull carts with 72 bulls were confiscated; and 223 illegal loggers were arrested and fined.

Moreover, community-based anti-poaching operations are functional enough to safeguard biodiversity and forest resources from poaching, encroachment, and illegal logging. During this fiscal year CBAPOs in corridors have done a remarkable job of evicting encroachers from 103 hectares of forest land and confiscating 167 traps set by poachers for mammals. In addition, CBAPOs confiscated 5,500 cubic feet of timber from illegal loggers and levied fines equivalent to USD 3,000. CBAPO of Khata did a remarkable job in taking action against poachers; on June 29, 2005, villagers in Khata corridor discovered that Indian poachers had slipped into the Buffer Zone Forests of RBNP. They immediately mobilized various community forest user groups and more than 300 users surrounded the forest and flushed four poachers who were laying traps for tigers, spotted deer and wild boar. The poachers confessed that they were hired by Hari Bohara, a local resident, who was duly apprehended by communities. The three poachers confessed also that they were paid USD 70 each for killing a tiger, and USD 20 for a spotted deer last December. All of the offenders are currently in custody of RBNP.

During this fiscal year, promotion of NTFP management has become a success which has been undertaken in partnership with Business Development Services—Marketing, Production and Service (BDS-MaPS) project. Seven hundred and thirty-one households have benefited directly from NTFP promotion activities. As a result of the program's facilitation support in marketing linkages development, NTFP worth USD 70,000 has been traded from the area to local and national markets. Likewise, market linkages have also been institutionalized between traders and NTFP farmers and collectors.

Two hundred and fifteen households are directly involved in cultivation of Mentha in wildlife impact areas in corridors and buffer zone. It has not only reduced crop depredation by wildlife but also enhanced alternate income generation opportunities for farmers. For example, 75 Mentha farmers earned more than USD 5,600 from Mentha oil. The program supported for technical skill enhancement as well as marketing linkage development. Our case study on impact of Mentha cultivation revealed that it has significantly reduced trend of crop damage by wildlife. On the other hand, one farmer in RBNP Buffer Zone earned more than USD 200 from Mentha. He invested it in poultry farming. He succeeded in making good money from poultry farming and further invested his earning in rice mill. Now he has repaired his house, his children are studying in local boarding schools, and he has a good reputation in his community as people come to him for consultation on many social matters. He attributes his well being to Mentha.

The program has strengthened its partnership with various organizations for leveraging investments across projects sites and activities. For example, Western Terai Landscape Building Program has been initiated as front loading of Dutch government to Western Terai Landscape Complex Project (WTLCP). WTLB has been implemented under the existing implementation framework of Terai Arc Landscape (TAL) Program in the western part of Nepal's Terai Arc

Landscape—namely Kanchanpur, Kailali and Bardia districts. This project has significantly leveraged investment in strengthening community forestry, species conservation, and sustainable development. Likewise, its activities in district level forest management, species action plans, human-wildlife conflict mitigation, etc., have been designed for complementarity with the TAL Program activities.

Another major success of the program this year has been preparation of an implementation plan of the TAL Strategic Plan. It is important that the capacity of TAL Program is enhanced significantly in development of financial models and business plans. Likewise, TAL Strategic Plan core team has also been involved actively in preparation of implementation plan.

Problems and Constraints

Major challenges of the program for next fiscal year will be as follows.

- **Partnership:** The program has a thrust to establish an implementation mechanism as per the spirit of the TAL—Nepal Strategic Plan. However, management of the strategic partnership with the government and nongovernmental agencies, and streamlining their program into the TAL program implementation mechanism will be a challenge, as their working modality and agenda varied significantly.
- **Financial and institutional sustainability:** Since the program is running in the final year of the first phase, sustainability of outputs achieved to date needs to be assessed and the program has to come up with sustainability strategy. Preparation of a sustainability strategy for ground level activities, as well as sustainable institutional and financing mechanism at the program level will be both challenges and opportunities for the program.
- **Conflict:** It is apparent that working in a conflict situation is not easy. Thus, the program has a challenge to strategize its program implementation in situation of conflict. Despite the fact that TAL program projects performed satisfactorily, program implementation has yet to be adapted to suit the conflict situation.

Lessons Learned

Major lessons of the program during this reporting period are as follows.

- Poor and marginalized groups have limited absorption capacity to benefit from project interventions such income generating activities. Thus, special targeting mechanisms are required to effectively target them and ensure their effective participation in and benefit sharing from project interventions.
- Livelihood development activities should target the households that are solely dependent on forests resources for daily sustenance in order to reduce pressure on the forest.
- Demand of fuel wood from urban and industrial sectors is highly responsible for excessive extraction of fuel wood. Thus, fuel wood demand from urban and market sector should be addressed.
- Population related interventions are also required to address the threats to biodiversity from population growth.

Subgrantees

- Protected Area Offices: Royal Chitwan National Park, Royal Bardia National Park and Royal Suklaphanta Wildlife Reserve
- District Forest Offices: Palpa, Dang, Bardia and Kailali districts
- Community Forest Coordination Committees: Dovan (Palpa), Lamahi (Dang), Mahadevpuri (Banke), Khata (Bardia) and Basanta (Kailali)
- Buffer Zone Management Committees/User Committees of Royal Bardia National Park and Royal Suklaphanta Wildlife Reserve Buffer Zones
- Eco-club Network, Bardia