

Darwin Initiative – Final Report

(To be completed with reference to the Reporting Guidance Notes for Project Leaders
(<http://darwin.defra.gov.uk/resources/reporting/>) -
it is expected that this report will be a maximum of 20 pages in length, excluding annexes)

Darwin project information

Project Reference	Di 16-009
Project Title	Crisis to Biological Management: Rhinoceros, Grassland and Public Engagement – Nepal
Host country(ies)	Nepal
UK Contract Holder Institution	Zoological Society London
UK Partner Institution(s)	CABI International Europe UK
Host Country Partner Institution(s)	National Trust for Nature Conservation (NTNC), Department of National Parks and Wildlife Conservation (DNPWC), World Wide Fund for Nature Nepal.
Darwin Grant Value	
Start/End dates of Project	April 1 st 2007 to March 31 st 2010
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1 Project Background

Greater one-horned rhinoceros, restricted to Terai of Nepal, have suffered the loss of 1/3 of their population over ten years, primarily due to poaching and habitat loss, a result of weak management and inadequate antipoaching efforts. The purpose and outputs relate to 1) strengthening monitoring and surveillance of rhino and anti-poaching; 2) strengthening metapopulation management approach and habitat management and 3) facilitating improved governance of rhino conservation and public engagement. Outstanding achievements have included; significantly improved monitoring and reporting for informed decisions both at the park and national level, elimination of poaching in Bardia National Park (BNP), improved capacity for dealing with invasive alien plant species and habitat management, better awareness and engagement of communities and stakeholders including the support agencies, improved livelihoods and reduced human wildlife conflict and initiation of trans-boundary initiatives.

2 Project support to the Convention on Biological Diversity (CBD)

The *in situ* project was successful in contributing towards a number of the articles of CBD; fostering cooperation between the stakeholders in rhino conservation and the communities around the species refuges; improving the general conservation measures for the rhino and its habitat with a particular focus on anti-poaching and invasive alien plants; an important focus was on better identification of the conservation issues with major impact on monitoring including standardised training, census, monitoring and reporting systems resulting in improved baseline data on the rhino population, habitat, threats and on-going analysis of data on rhino status, threats and law enforcement; communities and staff were incentivised through e.g. sustainable livelihood opportunities and training with several research initiatives with technical and scientific skills transfer and cooperation between institutes and agencies; this has strengthened the institutions especially in a practical and local aspect; improved public

awareness mostly at the local and National level has been considerable; reports are providing input into general conservation literature on status and method. The themes addressed were all covered in proportion with most progress in the staff and community engagement in meaningful rhino conservation, in an ecosystems context and despite considerable social and political constraints due to the countries emergence from conflict and the poor governance of conservation in the country.

The project was working closely with the CBD focal point the Ministry of Forests and Soil Conservation both via NTNC where the Minister is Chair of the Board of Trustees and through the Department of National Parks and Wildlife Conservation Director. There was also contact with the Permanent Secretary (PS) in the Ministry on CBD issues and even the Prime Minister on occasions where the CBD related themes were discussed.

The project has also contributed to CMS objectives through improved transboundary cooperation with India in the BNP ecosystem. Common monitoring and reporting systems are in the process of being implemented following the success in Bardia NP. Information on poaching that has come to light mostly through the project activities or the conducive environment created by the project and these have been highly significant to understanding the underlying causes of the poaching and channels for trade of horn relevant to CITES. Integration of community youth anti-poaching groups in the corridor forest connecting the Nepal and Indian NPs has also been instrumental. At a policy level there is some progress including the possibility of including the corridor forest within the community buffer zone. The wildlife "rhino" based patrol monitoring system has also been adopted by India for Tiger conservation across all the 38 tiger reserves with an ecological monitoring and reporting module providing vital information on tiger, co-predators, prey, mega-herbivores and habitat. The development of a wider western Nepal-northern India trans-boundary programme (Bardia NP, Dudhwa NP, Katarniaghat WR, Pilibit WR, Shuklaphanta WR) by local institutions is an additional important long-term contribution of the project to protecting biodiversity.

3 Project Partnerships

The main implementing partner in Nepal NTNC, with which ZSL has an MOU, is the major National Nepalese conservation NGO and the PI sits on their board of trustees. This has strengthened over the period of the partnership to the point where now ZSL is considering developing a conservation hub, with permanent staffing and possible NGO status to build on activities initiated under the DI project. Over the period of the project there have been considerable political changes in Nepal with the abolition of the monarchy and the Maoist party as the dominant emerging political force but continuing yo-yoing of political forces and government department staff. The relationship of NTNC/ZSL with the DNPWC has been close, especially in the field with the latter being the main beneficiary of the DI project outcomes. Although the objectives of the project were clear from the beginning we have responded and adapted to the demands of the local partners and worked as much as possible within the existing structures catalysing and facilitating but not dictating. The planning process was always completed in-country and directly with implementers, endorsed by the various line management authorities.

Of the other partners; WWF has come closer to the project over time (from a fairly frosty beginning) and in the end is contributing significantly, at least financially to some of the ideas and initiatives started, supporting, adapting and absorbing these into their programmes and projects for the PAs and the rhino. The reason this has happened I believe is two fold, a realisation from the positive outcomes that something is working and the methods are best adopted and a genuine increase in dialogue and engagement with certain of the WWF officials both in Nepal and UK, i.e. more of a partnership rather than competitor. DNPWC remains underfunded and less effective than it should be, a government department that is in urgent need of investment and restructuring in order to rehabilitate management and restore morale and pride in the service of protecting valuable heritage and natural resources in the country. The project has had no difficulties engaging with field staff and has focused here. At the higher levels the tense politics and frequent appointment or retrenchment of key staff in the operational areas makes engagement difficult. This remains a problem especially in Chitwan National Park (CNP). The current DNPWC Director General (DG) is particular supportive and helpful and it is a pity he was not in place earlier but his own position remains precarious and

this is already creating stress in the functioning of the department and preventing rapid resolution of the CNP crisis that persists. Given the governance, support, equipment and training that the department needs, their staff made considerable efforts for the DI work so the situation is not hopeless. However, it continues to bleed with the better staff usually going to NGOs like WWF and this is a very unfortunate trend and can only undermine conservation in the long term. The department requires a major injection of funds (a multimillion pound investment) and a complete restructuring to secure the long term future of the PAs of Nepal. The department is still dependent on the Army for security and this remains a high risk strategy. The origin of poaching cases from the army cadre have shown this to be the problem historically in BNP and given the continued persistent poaching of rhino in CNP, the majority close to the headquarters, one must suspect at the very least official collusion in this and the system of protection needs radical overhaul. The practical changes in BNP, initiated by the project and effective public engagement have solved the problem in that park, at least for the present but the much more challenging problems in CNP, in terms of scale and politics, remain largely unresolved. The project has facilitated a re-assessment of anti-poaching methods and security structures, established a block monitoring system in the eastern and western sections (with 17 monitoring guard posts), such an active monitoring system has been the first time in the park's history and the results clearly are showing that poaching is being contained where there is active monitoring. As the DNPWC is in a weak position, the cost of setting up additional guard posts in the central portion of the park is considerable requiring not only infrastructure but monitoring elephants etc. Operational costs are also substantial given a system of allowance introduced by donor communities (to maintain staff moral as staff salaries are low). The challenges are considerable but the project has demonstrated a workable solution which needs to be taken forward. The project has also leveraged funds, to introduce a new approach based on an antipoaching task force, (combining the 3 main stakeholders, the army, NTNC and DNPWC into a more effective coordination unit, identified, responsible, mobile and equipped) to support the monitoring team.

The CABI inputs on IAPS remained positive with periodic advice given but overall their engagement has been more peripheral than the project had hoped for. The minimum was achieved but there has not been a catalytic engagement, from this much larger and networked institution, with respect to this non-agricultural problem. The obscurity of the issue is perhaps the reason why, conservation and Protected Areas (PAs) are not core business for them.

AWELY was encouraged to work on Human Wildlife Conflict issues in BNP liaising with and supporting the DI initiatives. A standardised HWC data recording system has been established with two full time staff employed with the DI project guiding in the data analysis and the preparation of the HWC plan with greater engagement towards the end and beyond. The Elephant Conservation International (ECI) has been valuable in supporting the relatively minor but important efforts of the project to promote improvements in the management of wildlife health in the Parks and integration with both human, elephant and livestock issues. The aspect of TB anthroponosis is of particular interest whereby infected people are infecting elephants with Tuberculosis compromising the PAs management which is very dependent on domesticated elephant for most important activities.

Theatre for Africa, an internationally renowned environment theatre company based in South Africa significantly contributed to initiating the rhino theatre performances both nationally and in the UK and Barcelona (World Conservation Congress).

National NGOs have been engaged, the most notable being Earthbeat Nepal on public engagement activities. The group goes from strength to strength, after the project was catalytic in its inception and provided training in the approach to environmental and conservation awareness-raising. They have become a strong focus for Nepali society and in lobbying government in relation to conservation and environment.

Fund for Tigers, a US based non governmental organization, joined hand at the later stage of project execution to secure the Khata corridor and has committed its support for longer term.

IUCN has remained distant since its country office was dysfunctional. IUCN SSC Rhino and Wildlife Health specialist groups have provided some valuable inputs and the Red List has been initiated through by-products of the project coordinated by ZSL.

Other Nepal based organisations have been helpful with advice and other contributions in kind or logistics including; the British Army, in particular the British Ambassador Andrew Hall and his staff and the British Council.

4 Project Achievements

4.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The project was designed to catalyse change, from a deteriorating biodiversity and habitat conservation status in the Terai PAs of Nepal to achieving a recovering population trend of rhino, grassland habitat and as a byproduct, benefits to a wide range of other species. Rhinoceros is the umbrella / flagship species. The project focused on 3 areas in order of priority; BNP, CNP and Suklaphanta Wildlife Reserve (SWR). The impact was significant in all areas. In BNP there was elimination of rhino poaching from 2008, largely through engagement of the communities surrounding the Park and by their active role in anti-poaching. Each surviving animal is individually known and monitored on a daily basis including, transboundary movements to India and around the buffer zones of the protected area. The monitoring not only performs a security function but is vital for biological management. In this regard status reports are now being generated for meta-population management.

CNP has an improving block based monitoring system in place that is producing a regular indicator of the level of poaching and also containing poaching in the most effectively monitored areas. Based on biological principles, the level of poaching in CNP is unsustainable and measures are now being put in place to improve antipoaching, set up on-going monitoring in the remaining areas and create the right conditions for elimination of all but exceptional poaching activities. The better information flow from CNP is being interpreted by media and government as deterioration in the situation but this is not likely, the monitoring has exposed what was hidden earlier and explains the rapid decline in population by 1/3 over a decade. The impact in SWR has been minimal but there is improved awareness and dialogue over future management of rhino and other species in this important grassland area. The rhino population in SWR is unviable at present and it was considered a lower priority to the other regions given the limited resources of the DI initiative. The project was willing to invest but the strategy for investment was based on the sanctuary approach with a fenced large enclosure developed for securing these few rhino and allowing the controlled introduction of new individuals. Initial field assessments were carried out and a concept paper produced and circulated to all stakeholders. However, it was not possible to obtain the necessary political will for this over the period of the project although considerable progress was made and acceptance of the approach at official levels but with some resistance from partners (WWF) which are focused on a landscape approach to conservation and find this necessary measure difficult to accept in principle.

The regular systematic elephant back, foot and vehicle based monitoring takes into account more than just rhino and should provide the means to assess trends in a range of other species. The very presence of monitors and activity from the authorities in key zones is a deterrent not only for poaching but also other illegal activities. This process underpins the basis for more reactive elements in management. The extent and severity of the invasive alien plant species (IAPS) in the PAs particularly the principle invasive "*Mikania micrantha*" in CNP has been documented and research initiated into the impacts of this on the grassland and species dependent on the forage and refuge aspects of grassland, rhino again being the indicator species. The focus on this aspect has already enabled planning on reassessment of the burn regime in the parks which the experts now feel might be a primary cause for the invasion with mechanical removal as short-medium term solution in prime areas. This needs to be integrated into park management plans particularly grassland management based on traditional practices. The park authority now see this need and funds are leveraged to pilot this in the coming dry season. There is also the element of community use and benefits from the grassland resources which appears to have a disturbing influence and may also play a role in IAPS invasion and distribution. The longer-term control strategy of a bio-control agent is being explored and is beyond the life-time of this project.

The attention to the community has been one of engagement, education and awareness raising and dealing directly with conflict issues, particularly crop raiding by rhino and elephant. To address this in selected areas of BNP was possible and the apparent benefits significant. Assessment of this impact is currently ongoing but not yet available for reporting. Publications will ensue and are in preparation. The impact of fencing has been obvious with less nights spent guarding crops, fewer reports of rhino raids on land protected, although there is some deflection of the problem into other areas which is a concern. The use of alternate non-palatable cash crops (aromatic plants) in addition to the rice crop, in highly raided farms has taken off beyond expectation (almost double the uptake) and the commercial benefits are immediately obvious providing more economic resilience. On the negative side the real costs and benefits are being evaluated and there is some concern over drop in rice yield (perhaps nutrient related), which will have to be thoroughly assessed and ameliorated perhaps through better nutrient recycling and waste management.

4.2 Outcomes: achievement of the project purpose and outcomes

Strengthening the capacity in monitoring and surveillance of rhino and in anti-poaching has been spectacular in BNP and is improving in CNP and to a lesser extent in SWR; the progress in metapopulation management approach has been limited but the tools for evaluating the biological necessity for this are now in place and it is hoped that sanctuary approach, translocation and more scientifically based population management will be the long term outcome of the process that has been successfully launched. Habitat management is an expensive and extensive activity beyond the scope of the project but again tools are in place for monitoring and, research initiated to assess impact on biodiversity. Recommendations are already in place for management should they choose to follow these and it might not be so difficult to resolve IAPS and some of the disturbance issues if the political will and better governance can be achieved. The latter outcome is the most disappointing with little evidence, yet for improvement. Local governance in BNP is working largely because it is not receiving much outside interference or political heat and the various stakeholders from community, army, DNPWC and NTNC are working well together. There is a motivation to succeed and the scope of the problem is within the capacity of the people involved. However the non-rhino area of Babai valley is being depopulated of wildlife and this is the next challenge for conservation to re-establish effective protection across the range. This is now being developed with partners with a 5-year strategy for reintroducing rhinos if the conditions allow. This includes strengthening security through guard posts, improved road network and the creation of buffer zone with meaningful community engagement in the northern border of the park. Funds are being leveraged through USFWS and ZSL facilitated a visit by the FWS fund manager. The Government of Nepal has just approved the creation of the buffer zone (180+ sq km) in Surkhet District.

The community youth APU in the Khata corridor forest (outside PA thus the army is unable to provide protection as its mandate is inside PAs) is working effectively with over 100 local youths involved. A guard post has been setup in corridor and the APU provided with track-suit uniforms and bicycles. The transboundary meeting with Katarniaghat management authority and the WWF Terai Arc-landscape manager was constructive and there was agreement in setting up a common monitoring system with Rhino master ID files, and rhino sighting and patrol data recording in a common database system with transboundary monthly reports. This followed a 10-day DI training workshop conducted for Indian forest officers and scientists on rhino and wildlife monitoring, metapopulation management and community engagement funded by WWF. On advice, a proposal was submitted to WWF-India for the implementation of the ID-based rhino monitoring on the Indian side and still waiting for a decision on this.

CNP staffing and leadership is in constant flux and governance is poor and the impact is inappropriate action or total inaction. This might reflect political issues and even collusion from rogue elements amongst the various authorities, perhaps who are even involved in poaching syndicates and certainly guilty of lax and inconsistent management. CNP has high status (world heritage site) and high (illegal) resource value from a population of 400 rhino and a still significant tiger population. Public engagement is also less integrated than in BNP and again highly politicised with media pouncing on every opportunity to sensationalise and attack the authorities which is also not helpful. The outcomes of the project in public engagement have

IAPS?

USFWS?
FWS?

APU?

US Fish & Wildlife Service

been mostly beneficial. At the educational level in BNP there are now well trained and motivated teachers across a wide area and enthusiastic adoption of the conservation ethic particularly for endangered species and their habitats by the children. This will no doubt have beneficial deterrence on parents involved in illegal activities in the Park. Adult education and awareness raising has also been successful in BNP reflected by the wholehearted adoption of the livelihood opportunities and responsibilities to protection of their resource. More widely, the strong growth and activity of the Earthbeat Nepal NGO which benefited from training and opportunities through the project has had a very important impact at the political and Nepal national society level. It has become a focus for debate and lobbying in press and through theatre performances which is putting pressure on the Government to improve its record with biodiversity conservation. It is weaved into the wider political issues which are on fire in the country currently as it tries to achieve representative democratic government. We believe progress in this aspect will also be helped through the iconic value of the species protected by the Nepal people through their government. It will be an indicator that they have made it through this difficult time if rhino and tiger numbers start to recover. There will be clear economic benefits with improved security, animal numbers and atmosphere for tourism. This needs to be re-established in a more balanced and equitable manner with more care about environmental impacts and benefit sharing.

4.3 Outputs (and activities)

Improved capacity and systems to monitor rhinos and for anti-poaching have been institutionalised and significantly contributing to protection in areas where the setup is supported with sufficient resources and commitment (Annex I a: IUCN AsRSG accredited Rhino Monitoring Instructors Training Package – manual, posters, assessments; b: Rhino Master ID record template, sighting and patrol forms; c: Patrol Based Rhino/Wildlife Monitoring System manual; d: Scene of Crime Investigation manual; e: APU concept paper). In addition, if biological issues arising continue to be tackled based on the scientific information available on a regular basis, there will be improving biological management of rhino and their habitat. As part of this process park status reports are now being produced by trained local staff. Baseline data on rhinos were obtained through a national census with a more accurate developed methodology (Annex II a, b).

On habitat management, baseline mapping of the abundance and distribution of *Mikania micrantha* the principle invasive in CNP has been conducted across all potential areas. The potential drivers of the spread have also been studied through community surveys on resource needs and extraction, and disturbance including the use of fire. IAPS impact studies on rhino, selected ungulate and plant species have been setup as part of a longer term research project in collaboration with the Wildlife Institute of India and shorter term local MSc project. Control trials for short-medium term control measures are being developed as part of this work (Annex III).

On metapopulation management: an initial feasibility study was undertaken on a sanctuary for establishing a viable growing rhino population in Shuklaphanta WR (Annex IV); PA under significant pressure from local communities and poaching. This document has been discussed at various levels. DNPWC management has been supportive but is weak and WWF is now in agreement with the principles and a detailed plan with timeframes and budgets (sanctuary and other options) will be developed in late 2010.

The community support has been remarkable in BNP where the focus has been to develop a model programme focussing resources which can be replicated in SWR and CNP. This included an extensive education and awareness programme being supported by a mobile education unit and range of material developed by the project (Annex V). Multi-purpose aromatic plants and more effective electric fencing systems were piloted and cost-benefit analysis being undertaken. Baseline data on HWC has been compiled and results being fed into the development of an effective HWC mitigation plan. There were improved benefits for the community in BNP and in targeted areas in CNP from these resulting in livelihood enhancement and less human-rhino conflict. Progress has been significant on stakeholder integration at a community/authority level and at the NGO level but the commitment of government to resolving internal conflicts and poor governance and integration between the authorities involved has been disappointing. The latter issue is fundamental to sustaining the

gains and ultimately resolving the conservation crisis in the longer term. The project was able to provide some bridging and influenced certain individuals and sectors but the task was too great to resolve and is largely affected by the lack of effective government and tendency in the country towards federalism and opportunism. Improved tools for science based conservation have been provided and adopted largely by the NGO and Government scientific, technical and field staff. Locally this is effective but conflicts remain problematic, at the policy level between, central and peripheral locations, with sometimes negative influence from external agencies, NGOs, private sector and media. Additional publications are in preparation (such as the HWC mitigation plan) and will provide important milestones in conservation in Nepal and publicity has increased subtly and the wide exposure of the project outputs in the Indian sub-continent under the banner "bodyguards for rhino" at the end of 2009 had extraordinary mileage and influence on thinking about, in particular, rhino conservation in the region. If there is a failure in not self promoting the project and other agencies involved we are guilty of this fact but a low profile has probably enabled a far deeper penetration into the heart of the matter than otherwise. Direct involvement of project principles in the field was a key to the progress made, it could not have been done otherwise as the low morale and motivation of staff was evident from the start, this put considerable burden on these people, especially in sustaining administrative inputs as the UK partner organisations involved were unable to provide much support in this respect. Administration of the project from the NTNC, in country was exceptional even if progress was slow at times, largely due to the complex network of stakeholders/decision makers involved and disjointed, ineffective governance mechanisms in place for conservation action. The tolerance and flexibility of certain key individuals in rhino conservation in Nepal who took great risk to provide space for our ideas and project activities was the key to success and this was the result of achieving trust early on in the engagement.

Pachyderm health was handled with support by a partnership that arose during the project with Elephant Care international, a US NGO focused on dealing with captive and working elephant health in Nepal. There was considerable progress made on dealing with a serious anthroponosis Tuberculosis presumed transmitted from infected humans to elephants. Prevalence was 23% in the working elephants in CNP with cases also in BNP but fewer. The infected animals are now being treated at considerable cost. Other veterinary outputs include a decision by the DNPWC to develop (with NTNC and external NGOs) mobile veterinary teams to focus on wildlife health. This would be a significant advance but at least agreed now in principle. This will be a post project activity. The success of earlier established veterinary clinics in the CNP buffer zone are well recognised and we took the opportunity to evaluate the cost efficiency and effectiveness of these clinics and a MSc student is in process of completing evaluation of this and if they prove viable the model will be developed in BNP and SWR and elsewhere in Nepal probably under the growing One Health global initiative of WHO OIE and FAO.

Formal workshops conducted: a) Rhino Monitoring Instructors Training (Oct 2007; Feb 2008), >40 DNPWC, NTNC, Community staff trained; b) Scene of Crime Investigation (Oct 2008), >20 DNPWC, NTNC trained; c) Rapid IAPS assessment (Feb 2008), >40 DNPWC, NTNC and community staff trained; d) Boat handling training (Feb 2009), 8 NTNC and DNPWC staff trained; e) Rhino monitoring management training (Sept 2009), 6 Indian FD managers and WWF scientists, and 5 DNPWC and NTNC staff trained; f) Theatre (Nepal troupe trained); g) Pachyderm Health workshop; h) Closing project workshop in Sauhara Chitwan; i) Seminar on Nepal Conservation at the ZSL London to celebrate the Nepal Year of Conservation 2009.

There was considerable field based training from the UK experts and consultants and a number of education and awareness events and these are not reported on specifically.

4.4 Project standard measures and publications

See annex 4 & 5

4.5 Technical and Scientific achievements and co-operation

1. Science based conservation – improved rhino census methods, patrol based systems and systematic status and event based reporting, individual identification, science based anti-poaching and post-hoc assessment and processes to support enforcement of convictions for and prevention of illegal activities. Improved science and methods for biological and habitat management have been developed and are being implemented. Improved educational methods and approaches in schools, amongst community of all ages, through classrooms and by popular engagement through theatre and other media, mainly through TOT approaches by the project are in place. Improved understanding of HWC through standardised systems and cost benefit analysis of HWC mitigation approaches leading to effective HWC resolution plan. Strong partnership regionally has been developed between the scientific institutions NTNC, Wildlife Institute of India and ZSL. Monitoring protocol and reporting system for mega-herbivores, tiger and co-predators, prey and habitat has been developed to be implemented across Nepal-India. Attention has been brought to improved veterinary wildlife health management of pachyderm populations. Publications are in preparation and research outputs pending and it is too early to assess or report on these aspects.

2. Outline of key research activities

- a. Effect of *Mikania micrantha* on the nutritional ecology, habitat use and demography of the Greater One-Horned Rhinoceros in Chitwan National Park, Nepal (PhD Research at WII): (see Annex VI) for project objectives and methodology. A complete mapping (distribution and abundance) of the principle invasive in Chitwan NP has shown that about 50 percent of potential rhino areas are affected by the principal invasive species with prime rhino habitats (riverine forests and tall grasslands) most affected. Rhino density is correlated with distribution and abundance of *M. micrantha* infestation. Further studies have so far shown that the species is unpalatable to grazing animals and may cause dietary problems in wild grazing species such as deer. The invasive plant from South America has a different ecology to Asian herbaceous species and is more efficient than local species at high nutrient uptake when these become plentiful such as when fires burn vegetation and release the nutrients on the ground. Thus under fire regimes, these invaders out-compete local plant species. The invaders are also very dependent on light and are very fast growers. These factors alone may explain why these plants have become so abundant in areas such as Chitwan. The invading plants have also been introduced without their host specific natural enemies and thus this is the rationale for considering biological control as a longer term component of a management plan. Detailed studies are on-going including control trials and intensive impact studies including radio-tracking of rhino; 7 GPS collars have been procured and two rhinos have been fitted with radio collars. Short term mechanical control measures focussing on identified prime rhino habitats with staggered burning / fire-break system is being implemented through integration into park management plan. Processes for longer term biological control are being put in place through potential USFWS funding. A manuscript is being revised following comments from Oryx.
- b. Hugo Richardson RVC ZSL Wildlife Health MSc field project CNP evaluation of cost and benefit of the veterinary clinics set up in 1995 in the buffer zones.
- c. Lydia Tiller RVC ZSL Wildlife Biology MSc field project BNP Cost-benefit analysis of HWC mitigation measures in BNP.
- d. Impact studies on food plants of selected herbivores (rhino, chital, hog deer, Sambar) MSc project (Tribhuvan University). Study being completed in July 2010.
- e. HWC data analysis – Systematic HWC data collection has been setup with Awely in Bardia NP. Historical data from 2000 onwards has been translated and compiled. HWC understood, Pilot mitigation studies set-up and cost-benefit analysis conducted. HWC plan being developed with stakeholders.

WII ?

RVC ?
Royal Veterinary College ?

4.6 Capacity building

In respect to the expected outputs, evidence for improved capacity comes from a variety of outcomes: the success of census in all Parks, ongoing standardised monitoring and reporting in BNP by local staff (see annex VII), indirect reporting from CNP (heightened media interest in poaching reports) and reduced poaching in sector the area mainly engaged with in CNP (eastern sector), antipoaching efficiency and effectiveness improved in BNP/ SWR with poaching halted in BNP and early detection of poaching improved in CNP. Opportunities provided in livelihoods has motivated farmers to learn new crop management and processing (Mentha, Camomile and Lemon grass), HWC fence management has improved through careful design of systems and community maintenance networks. Regular and ongoing school activities by trained trainers in BNP, regular community meetings around natural resource management in BNP, growing conservation and environmental awareness through ongoing theatre in Kathmandu, internationally and locally in BNP and CNP through the capacity achieved and popularity of the events and message, resulting in a powerful society voice on conservation. *Mikania micrantha* and other IAPS awareness has improved as a result of the project and the capacity of NTNC to deal with the problem is improving through research and monitoring.

The main way in which capacity has been enhanced was through field training and mentoring of staff in situ, equipment (3 out-board engine boats and 1 pedal board, 1 mobile education truck, 2 vehicles, various computer equipment, monitoring equipment (40 GPS receivers, 10 binoculars, 10 digital cameras, 10 radio hand sets, 7 GPS radio collars, night vision equipment), sustainable finance through seed funding new pro-conservation farming practice and creation of an enabling environment for effective conservation, at least in BNP and to some extent in CNP. Regionally, a standardised rhino (and other wildlife) monitoring instructor's training course has been developed (IUCN SSC) with field procedures and tools (monitoring protocols, rhino sighting form, patrol form, master ID file, patrol based wildlife monitoring system). Park managers and scientists from India have also been trained and system is to be implemented in several parks with small populations. Capacity in the innovative use of street and stage theatre to highlight conservation and environment issues has also considerably been improved. Earthbeat, the trained theatre company is now training rural theatre groups.

Staff of NTNC and DNPWC have been able to capitalise on the energy and support of the project and in some cases staff were able to further their academic standing, 2 PhD programmes registered in regional institutions were initiated.

The UK lead institution has been able, to a limited extent, to improve its own capacity through the project, to be more effective as a partner, by leveraging further funds and placement of temporary staff member in Nepal to help post-project activities and for future development. Whether this can be sustained is uncertain. The project has been seen to be successful internally at ZSL and the results have motivated the institution to look at longer term engagement and presence in country to further its mission but has not been able to make provision under current economic conditions. Unfortunately the principle partner has not been able to absorb some of its volunteers into formal positions within its institution in UK but one of these has gone on to be employed in the conservation sector (Nature England). There have been a number (4) of UK MSc students and 2 Nepal students progress through their degrees with their field project work in Nepal also contributing to their careers and project outputs.

4.7 Sustainability and Legacy

The systems now in place for conservation in BNP e.g. monitoring and reporting, antipoaching methods and prevention, conflict mitigation measures, mobile education and awareness programmes are likely to endure as they are seen to work. The motivation to sustain this is high and despite ongoing poor governance issues from higher levels of management. The setup of a trans-boundary common monitoring programme will also be a very important step forward, In CNP there is no certainty that the lesser gains made here can be sustained under current management other than in the conflict mitigation area which will be community sustained and possibly monitoring and habitat management if the NTNC and WWF continue to invest.

Project staff are all fully engaged as officers of NGOs or Government and others from the private sector that have benefited will continue as they are self sustaining through their own economic means.

It is likely that the improved foundation for partnership achieved through the project between NTNC, WWF (UK and NEPAL), DNPWC and ZSL; regionally with the Wildlife Institute of India and IUCN SSC - ASRSG; and with USFWS – RTCF Asia (see funds leveraged) and CABI will continue as the positive outcomes are there for all to see and high to local levels of authority are very supportive of continued collaboration, technical and scientific support. Communities are knowledgeable of the NGO inputs and welcome these and there is sufficient trust to ensure stronger projects and cooperation in the future. A number of further initiatives are now running (antipoaching BNP, CNP) and others in the pipeline – river and fisheries initiative in BNP, red listing of major taxonomic groups (KTM), local theatre development (KTM and BNP), Babai Valley recovery initiative BNP. Others are being developed including One Health – Terai and mountain areas (Manaslu Conservation Area, Upper Mustang as part of a Himalayan wolf project), Field techniques course (annual - targeted at local MSc students and practitioners including managers and scientists), trans-boundary standardised monitoring programme (a major initiative encompassing mega-herbivores, tiger and co-predators, prey and habitat). The ZSL office is still being sent sensitive information on the rhino situation by the Nepali authorities for discussion and comment without hesitation. The link on mentoring and advising the authorities will continue for the foreseeable future.

5 Lessons learned, dissemination and communication

Key lessons:

- 1) It is possible to achieve outputs despite serious social and political constraints in a post-conflict environment and with relatively dysfunctional organs of state relevant to the management of protected areas but still relatively functional park level management, NGO and community connections and sufficient acceptance/endorsement from the authorities.
- 2) Official data and information can be misleading under conditions as described in 1) and it is necessary to have close engagement and develop a level of trust and knowledge especially at site level, in order to understand the main constraints on conservation and true causes of decline in species biodiversity.
- 3) Countries like Nepal have highly competent and dedicated people working in the conservation and wildlife management sector but who are disadvantaged by the social and political circumstances that they work under. If given some support, the response and outputs are highly significant. Using carefully selected individuals the output per pound investment is much higher than in many other situations.
- 4) Poor communications (telephone internet systems) constrain any coordination activities that arise from the UK. Most progress is made in-country during field missions.
- 5) Conflicting policy on conservation between agencies, NGOs in particular respects with species and methodologies can constrain progress. Consensus amongst partners is perhaps not a pre-condition but will help to prevent delays in implementation especially of novel ideas.

Information Dissemination:

- 1) In the UK this was achieved through reporting to Darwin and internally at ZSL to interested parties (which led to a senior staff and governance visiting Nepal to look at progress) and through seminar/meetings with other UK conservation NGOs and interested agencies and more publicly through the ZSL website and through media opportunities (filming and newspapers).
- 2) In Nepal the forum was through local meetings of community and the authorities facilitated by the NGO partners, using established bodies like buffer zone committees, boards and line managers; another approach has been through formal education, TOT

and classroom/field visits for young and old alike, and theatre both locally, in cities and internationally. Media has picked up in Nepal, it is very sensitised to conservation and especially rhino and tiger issues, it reports on a regular basis and at one point the reach was sub-continental when the story of Nepal establishing rhino bodyguards was widely disseminated. This was the journalistic interpretation of the project purpose and remarkably apt.

- 3) Information flow from the project and its outcomes will continue through pending publications and communications. E.g. a presentation was made to EAZA in UK in early July and was well received. Media is a two edged sword though and the project did not overemphasise this aspect and will not seek to gain publicity for the UK institutions involved that is of no benefit to conservation in Nepal. This is in order to remain as neutral as possible and to retain trust and engagement with all stakeholders.

5.1 Darwin identity

All vehicles and project offices had Darwin branding and the brand was used in all internal, meetings, seminars, symposium, training workshops, in reports and publications both within in Nepal and internationally. Whenever possible Darwin label badges and stickers were used but requests for stocks of these did not come through when a re-supply was requested apparently due to lack of stock (2009).

In BNP the DI project was recognised as a distinct entity but in CNP where there are many more NGO players and a more complex community, it was seen more as an enhanced contribution to NTNC programmes. The engagement in SWR was insufficient for there to be a distinct identity and inputs were seen to be simply supporting NTNC activities.

Darwin is a well recognised support in Nepal, which is a relatively small country and with relatively few stakeholders in conservation. The DNPWC NTNC and WWF are all very familiar whereas some smaller NGOs might not be. The media are not highly sensitised to this as a British government aid package as the sums are relatively small compared to DFID or UN agency grants or even WWF investments.

6 Monitoring and evaluation

The only two significant changes to the project design were in the public engagement activities.

Radio was not used mainly because this was well covered by the project partner WWF (regular programme on the Terai) and any DI investment would have been duplication. Innovative radio opportunities also seemed lacking. The use of theatre more than compensated for this and enabled more targeted approaches to communities most relevant to the rhino.

Extensive socioeconomic surveys planned for the buffer zones were cancelled due firstly to the fact other projects had undertaken extensive work and secondly because poverty in this region seemed far less a factor in the main issues concerning rhino conservation than hitherto thought. Poaching of rhino was organised by external agents (unfortunately some of these were associated with the authorities) and not dependent on community action but there was some paid community support to poaching but from poor villagers outside the buffer zones mainly. However, some elements of the socio-economics were incorporated in the HWC mitigation cost benefit surveys.

The most important indicator of the project (impact) was cessation of the decline in Greater One Horned rhinoceros in Nepal. In order to be able to monitor this indicator and evaluate the project success against this indicator, it was necessary to have a census of the population and following this, a system in place to be able to monitor and report the status of the population on at least an annual basis and preferably monthly. The census was completed (and published) providing the baseline on population at an accuracy never achieved previously. Subsequent to this by 2009/10 monthly status reports on rhino and many other attributes of the protected areas were being reported in a standardised manner. This was achieved in Bardia National Park and to some degree in the other 2 protected areas. In SWR, with only a handful of rhinos, counting was straightforward even if the monitoring at times has been intermittent but in CNP, it has proven a significant challenge mainly for political reasons. It is a much larger task than

BNP and any activities initiated by the Parks staff are heavily scrutinised by the Government and public alike, there is reluctance to report in general. The project focus was to show the problem could be solved in BNP (proof of concept) and this is proving to be a powerful incentive for CNP and progress has been made. Good information is coming from the eastern zone of Chitwan covered by the main project partner NTNC and some data from the centre and West. Overall it is not being reported in a timely-manner; however overall analysis and indicators are showing an almost halting of poaching in areas with effective monitoring. Rhino poaching is also being picked up earlier and getting the media attention with the Government now taking the matter seriously although the coalition is very weak. Recently, as another indication of monitoring effectiveness, two abandoned calves were picked up (the mothers most likely swept away by the floods as no carcasses have been found) which in the past would have been lost through predation or starvation. The detection of a new calf (initially the spoor and then a sighting) in BNP is another example.

The indicators on the outputs were varied and some required prior baselines. An example is the human wildlife conflict data to measure the success of the measures taken in the community to mitigate. Information was available in DNPWC official records. These were considered initially as a good standard but over time it has become clear that it had not been gathered in a systematic or consistent manner, nor was reporting done consistently which makes it difficult to interpret. The main problem was that compensation promised by government for HWC death, injury or damage was rarely paid, the incentive to report was missing in many cases. There are still attempts being made to use these data, the project data and that of partners (AWELY) to make some sense of the indicator results. This will have to be carefully considered in the workshop, still pending on this subject because simply improved reporting might show that the incidence of HWC has gone up, despite the mitigation when our baseline was inadequate. A decision will be made and this might mean examining the period of 3-4 years only and trying to tease out trend information. For the purposes of this report and the project we have used community surveys and discussions to indicate the trend. In Chitwan the fence was welcomed and a simple measure of success came from farmer's statements saying for example: that they were getting much more sleep now. The surveys in BNP are still ongoing as this was one of the last activities in the project, similarly with the non-palatable crop initiative (mentha). Regarding the latter, what we do know, is that it is proving economically attractive and the indicator on this is the number of farmers engaged, which measured more than double the predicted figure of a 30 farmer uptake. If it proves economically efficient (and indicators suggest this) then it is proving to be a sound mitigation measure reducing the impact of the HWC even if conflict continues.

Indicators on public engagement were non-specific but one which is pertinent for BNP is the fact the main poaching gang that had been probably active for years was identified and exposed by the community itself. Subsequent to this a large body of village men have joined a community based anti-poaching unit. The project has supported this group providing uniforms, training and incentives. The project and in particular a combination of consistent messaging through the permanent education and community liaison officers and volunteers had an impact and this was emotionally reinforced through the community theatre which was very popular. It also worked at different levels from the Capital city to the field and may have influenced the general positive attitude to dealing with poaching and poachers at all levels, as well as dealing with highly sensitive issues of military involvement in the poaching. It created more openness and a determination to not leave the matter unresolved.

Indicators on governance and management improvement were difficult to prepare for and provide indicators for, simply because of the volatility of the situation in Nepal. Attempts at establishing a national coordination framework on rhino conservation failed although an informal mechanism resulted from the programme activities which in the circumstances might be the best thing. At the field level, which is the most critical, significant changes in governance took place over the period of the project but these are difficult to measure or quantify. In BNP these amount to greater cooperation between army, DNPWC, NTNC and the buffer zone communities despite changing and largely ineffective governance from the Capital, continuing lack of government resources and/or engagement. Ironically it might be the lack of interference from above that led to a greater harmony and local resolution of the problem in BNP. The project was catalytic in this respect. This is where Chitwan has a grave disadvantage and why the project has not been able to influence the situation here more effectively. Chitwan attracts

local, national and international attention and seemingly, attracts regular outside interference in its affairs. It also suffers from a more fluid, less settled and less integrated community, a result of the rapid urbanisation of the buffer zones and there is a tendency for corruption as significantly more funds are provided, from various sources and perhaps without safeguards. Under these conditions poaching has continued to thrive. SWR is similarly, highly politicised, mainly over land issues, again making any theoretically effective mitigation measures difficult to apply. Indicators e.g. new rhino conservation strategy in place etc. became to some degree irrelevant to the situation but in time with ongoing success, more formal management approaches can be tried.

This said, the "ghost" governance in place, is not entirely ineffective and this was demonstrated when an individual from one of the partnership organisations attempted recently to publish on outputs of the project without clearance from partners. The material had reached the acceptance stage from the journal but once it became known it was rapidly stopped. This closer cooperation between the stakeholders and desire to be working together for rhino conservation is perhaps the best indicator of improvements in governance that the project has catalysed.

Indicators on science and progress in providing useful and new knowledge on the subject of rhino and grassland conservation including IAPS, arising from the project were straightforward and publications attest to this. These are not only in grey literature but will include peer reviewed material.

In general the process of using indicators has been useful. In this particular project they were not particularly subtle as the outcome was oriented around a species recovery. The success indicators have been useful in convincing partners to engage more fully and to get support institutionally for our work. As to internal M&E each organisation involved has their own systems and we will not report on these here but in ZSL we used a personal development review process to examine our outputs in relation to each of the activities but in fairly broad terms. There is an attempt to input material from projects into central databases in the organisation and have evaluation of the conservation effectiveness but the low staffing levels and weak resourcing makes this difficult to sustain and so far the assessments are quite superficial and I am not sure they are particularly helpful to the process. With a more solid financial base in the conservation programmes it would be possible to do more of this but as each staff has to raise most of their own funding to cover their posts it makes M&E in addition to other duties fairly unrealistic, but the intention is there and should improve with time.

6.1 Actions taken in response to annual report reviews

The project reviews were considered during all planning for the subsequent year activities. The issues raised in the first review were dealt with. In the final review, there were recommendations; to reduce project scope in the final year and focus on areas where most impact could be achieved. These included; the sanctuary approach in SWR, community support and education, a species action plan and response to government overtures on institutional arrangements relevant to rhino conservation.

These were all considered and addressed as follows.

The sanctuary approach continued to be debated and there was evidence in the final year for a shift in thinking within the government department, favouring the sanctuary approach but the main NGO supporting rhino conservation in the long term was still reluctant to adopt this method, against their stated aims of landscape conservation. Towards the end of the project it was decided to go ahead irrespective of this situation and a consultant was identified to undertake a full feasibility. Unfortunately due to delays in clarifying accounts it could not be endorsed before the end of the project period. ZSL and NTNC are now considering applying for funding to USFWS. Discussions have already been held with the fund manager. Due to uncertainties on the accounting, a precautionary approach was taken by the PI on expenditure which led to an underspend.

The emphasis on education was taken on board and further funds raised to continue to expand theatre work and a new volunteer from the UK brought in to support activities and these continue even post project. As to institutional arrangements we focused on the anti-poaching

aspects and raised further funds from donors to establish task forces in both BNP and CNP. This took considerable effort and high level negotiation but has been accepted and we are implementing these now. On the action plan front we are deferring to the IUCN Specialist groups to work on this for all GOH rhino in the region and support these initiatives in the normal way.

Concerns over the effectiveness and sustainability of the fence project were raised in light of reported problems in maintenance and electrical supply, a solar unit was recommended for Chitwan. This was addressed and these fences are now working much more effectively and sustainably. We took the lessons learned from Chitwan and were more thorough in our assessment of the Bardia fence and in ensuring long term community engagement and maintenance.

Concerns were also raised over stakeholder cooperation and territoriality. This was a major constraint initially but in line with these recommendations considerable effort was put into dialogue and this along with the clear success of the work especially in BNP helped to gain confidence and trust. As a result both in UK chapters and in Nepal partnering NGOs are consulting with us on joint strategies and funding opportunities with respect to rhino and other species in the Terai. The relationship of the NTNC and these NGOs has also improved considerably and we hope this will continue.

There was also concern about genetic issues over importation of zoo rhino which was suggested as part of the sanctuary approach in SWR. Given the slow uptake of the sanctuary principle this issue will not be a concern immediately but if our organisation remains involved, which it surely will be, this will be a priority.

Recommendations were also made to consider improving animal grazing communities in the protected areas as part of the strategy for the control of invasive alien plant species. The strategy on IAPS continues to be developed and this aspect has been taken on board. It was felt by experts that until some trials can be completed on fire management, the approach to grazing species population reinforcement as a tool should be considered but not until results of the former mitigation are known.

Criticism on the lack of currency on the website was noted but since the focus of the project was in Nepal and on Nepal communication and awareness it was not a priority for the managers. It was open and encouraged that the Society used the information and reports etc as it saw fit and to publicise the involvement of the UK. Darwin, equally were provided with material whenever required. It should be noted here that no overhead for staff time was taken on this project by the Society and given extremely heavy work loads, much of the work was done out of normal working hours. This has not adversely affected the impact or effectiveness of the project since the staff involved were highly dedicated and motivated to help.

7 Finance and administration

7.1 Project expenditure

Table 1: Salary and Equipment costs

Project team member	Budget	Actual	Variance
	Sean Murphy		
Rod Potter			(15)
NTNC project coordinator			(1000)
DNPWC project coordinator			965
Education and community liaison officers (2)			(1495)
TOTAL COST OF SALARIES			-1314

Capital items/equipment planned	Actual equipment purchased (note these items marked * purchased with matching funds EAZA)	Budgeted	Actual	Variance (....) overbudget
Binoculars (x12)* GPS receivers (x10) Digital cameras (x10)* Camping equipment (x8)* Walkie talkies (x20) For monitoring work – Computers+UPS systems & printers (x4), GIS SW For education & awareness work – laptop+UPS system, PC projector (x1)	GPS Comms. Kits (Computers etc. purchased in Nepal) Misc IT			(1416) 620 4026
Community mobile unit (x1) Vehicle (x1)	Truck Second hand pick up rehabilitated Id transponders Night Vision Radiocollars			188 125 (443) (1141) (2915)
TOTAL COST OF EQUIPMENT				878

Table 2. Total costs

	Budget	Actual	Variance
Rents, rates, heating , cleaning, overheads			4,626
Office costs eg postage, telephone, stationary			(1,856)
Travel and subsistence			(14,867)
Printing and stationary			1,612
Conferences, seminars, workshops, training etc.			11,111
Other			25,628
Salaries (from table 1)			(17,034)
Equipment (from table 2)			(836)
Contingency cost (NTNC)			(1,497)
TOTAL DARWIN COSTS			6,885

7.2 Additional funds or in-kind contributions secured

USFWS : \$60,000 Setup of a dedicated well trained armed APU in Bardia NP

USFWS : \$60,000 Advanced scene of crime training

USFWS : \$25,000 for radio collars

EAZA : £31,000 boat and monitoring equipment

PTES : £4,500 for theatre development

UK Trust for Nature Conservation: £70,000 for APU in Chitwan; £2,000 boat training

Taiwan COA funds : \$10,000 for improved translocation methods

Taiwan COA WWF: £30,000 IUCN SSC Rhino translocation guidelines – developed with a specific focus on Asian species - aid to decision making for metapopulation management

WWF: \$40,000 support for monitoring in Chitwan

7.3 Value of DI funding

The funding was catalytic to the activities particularly in BNP which led to marked improvements in rhino conservation and community engagement. New approaches in public engagement, mainly through theatre, rekindled hope and commitment from communities locally and improved motivation amongst conservationists and managers of rhino. The DI funding achieved some specific benefits in CNP but the more complex politics and funding activities made the progress here less apparent. The invasive alien species research, a very serious problem in CNP would not have occurred without the DI funding and success in monitoring rhino in BNP and the resultant antipoaching benefits led to CNP accepting this approach for the future. The introduction of the concept of sanctuaries has also made a significant impact on thinking, which would not have occurred otherwise. Initiation of transboundary programmes is another important step forward.

Annex 1 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements /April/2007 - March/2008	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 	<ul style="list-style-type: none"> • Cessation of the rhino population decline. • Take up of recommendations by DNPWC and NTNC for Terai grassland habitat invasive species management both in protected areas and community forests. • Take up of recommendations by DNPWC, NTNC and NGOs for buffer zone community livelihood, human wildlife (rhino) conflict and support programmes. 	<p>The project has significantly contributed to the conservation of Terai biodiversity (elimination of poaching of rhino from one National Park and improved monitoring, management and public engagement here and in the others) and significantly improved understanding of the causes and possible solutions of the habitat degradation resulting from alien invasive plant species.</p>	
<p>Purpose (insert original project purpose statement)</p>		<p>The rhino decline was halted in the main project area BNP and this has been sustained for over 2 years. SWR is stable. Overall the situation in CNP remains poor but in the project focussed monitoring area (eastern section) the poaching has been contained.</p> <p>Baseline data on the scale, and nature of the IAPS problem and awareness of control methods. The next stage, beyond the scope of this DI, is implementation of short and medium control efforts.</p> <p>Community take up was much greater than expected on all aspects of the livelihood and conflict measures.</p>	<p>Continued inputs on newer grants on antipoaching focused on BNP and CNP.</p> <p>New grant applications in process for control removals with fire management tools and to develop dossier for long term biological control.</p> <p>Formal evaluation to be completed on the impacts of the community engagement on livelihood enhancement (aromatic cash crops) and conflict strategy (electric fencing/non palatable crops) and ongoing efforts to secure integration</p>

Project summary	Measurable indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p>Output 1. Improved capacity and systems to monitor rhinos and for anti-poaching.</p>	<p>DNPWC, NTNC and community forest programme staff trained and accredited in standardised monitoring and anti-poaching; minimum of 10 staff also trained as instructors. Monitoring block systems established in CNP, BNP, SWR. New standardised security, monitoring database and GIS systems established in CNP, BNP and SWR; minimum of 9 staff trained. • Restoration of community support/networks. DNPWC scouts and officers trained in wildlife management.</p>	<p>Capacity and systems in place in BNP and partially in CNP and SWR.</p> <p>The indicators were appropriate as a measure of the success of the training and development activities but were not a measure of whether they were active, this came more effectively from the monitoring and reporting indicators.</p>	<p>of communities on the boundaries of the Babai Valley BNP – creation of extended buffer zones.</p> <p>Strengthening of transboundary programmes including Bardia-Katarniaghat common monitoring system</p>
<p>Activity 1.1 Monitoring Field work Training instructors Training field staff</p>		<p>All achieved to plan.</p>	
<p>Activity 1.2 Anti-poaching "Scene of crime" training Feasibility of tracker dogs GIS security information database</p>		<p>All training was completed other than feasibility of tracker dogs. It was unclear exactly why the latter was blocked as it was generally well received by both managers and communities but the senior staff were apparently reluctant to commit the organisations to something that they felt was likely to be costly in the long term. The GIS database was established. Strengthening of the scene of the crime training should result in improved anti-poaching efficiency.</p>	

Project summary	Measurable indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p>Output 2. Improved biological management of rhino populations and habitat.</p>	<p>Total rhino census in CNP, BNP.</p> <ul style="list-style-type: none"> ● Systematic block monitoring in CNP, BNP, SWR. ● Minimum of 9 DNPWC and NTNC trained in data quality control, analysis and status reporting. ● CNP and BNP Rhino population structure and demographics; 3 park and national status reports produced; report template developed. ● Viable populations established and intensively monitored; minimum of 4 staff trained in newer translocation and veterinary practices; 25 mahoots trained in elephant health care. ● Invasive Species (IS) trends, impacts and solutions: Research studies (e.g. MSc); workshop held, plan developed; 2 scientific papers submitted; Awareness activities 	<p>Completed baselines on rhino populations. Indicators suitable.</p> <p>Block monitoring successful and sustained in BNP and indicator (monthly reports) useful and being monitored. CNP and SWR has been slow to start and is only partially successful. Indicator again useful – monthly reports were being produced but then change in management at CNP resulted in a breakdown in this process. However, activities are ongoing under NTNC in the eastern part of Chitwan and elsewhere and it is a much bigger challenge than BNP.</p> <p>Staff all trained.</p> <p>National Status and distribution report of GOH Census report completed 2008.</p> <p>Status report since then completed for 2009 in BNP and SWR but only partially in CNP due to incompleteness of data.</p> <p>Viable population of rhino secured in BNP. SWR rhino remain unviable and CNP is showing a decline. Veterinary issues were not progressed significantly other than in the provision of a written (IUCN SSC) guideline on translocation of rhino and in establishing principles for future wildlife health systems and policies and in establishing principles for future wildlife problem is lack of resources human and material and the project could not address that aspect. Two young vets are coming up in the system but another has now left for MSc abroad and is likely lost to Nepal. Mahuts were trained through a partner project (ECI – TB project) so this was not included specifically in outputs.</p> <p>Status, trends for CNP and Mikania established; research ongoing and progress evaluated in the final workshop and reported. Short-medium and longer term solutions developed and planned to be implemented in the coming dry season. Awareness activities increased, including from supporting groups in Nepal, the Prime Minister became personally involved.</p>	

Project summary	Measurable indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
	<p>undertaken.</p> <ul style="list-style-type: none"> ● 4 DNPWC and NTNC staff trained in metapopulation management; Kenyan Darwin program visit. ● Strengthen cross border links with Indian protected areas. ● Study on sanctuary approach undertaken and national Rhino Conservation Action Plan reviewed. 	<p>Staff trained, Nepal staff visited Kenya under IUCN rhino guidelines project which was extended to review progress from the experience of the earlier Kenya Darwin Initiative on Black rhino.</p> <p>Significant progress on this with Kathamiaghat and BNP now in the process of establishing a common monitoring system with the prospects of a wider standardised monitoring programme for other threatened species including the tiger and its prey.</p> <p>The basic study was done and policy reviewed but there was reluctance to take this to full implementation. It remains on the table and hopefully it will be taken further and ZSL and other institutions are ready to assist.</p>	
<p>Activity 2.1. <u>Metapopulation Management</u></p> <p>Training translocation, veterinary and field officers</p> <p>Rhino information system + GIS maps</p> <p>Park and national status reports</p> <p>Viable populations</p> <p>National Action Plan</p>		<p>Any translocations is not possible due to the unstable political situation and within DNPWC. The IUCN translocation guidelines were introduced and adopted by the DNPWC and NTNC. Further funds have been secured to take this further when the political situation is more conducive to enable translocation. This will require securing the Chitwan rhino and confirming growth/surplus.</p> <p>Information and GIS in place.</p> <p>2008 completed. 2009 available in BNP and SWR and partially in CNP</p> <p>Viable population secured in BNP</p> <p>The frequently changing government and leaders of the main agencies precluded any progress on formal action plans or strategies. The strategy that was in place is largely unrealised and the usefulness of these under unstable conditions is questionable.</p>	

Project summary	Measurable Indicators	Progress and Achievements /April/ 2007 - March 2008	Actions required/planned for next period
<p>Activity 2.2. <u>Habitat restoration</u> Invasive species studies Plan</p>		<p>Completed Plan still in development but framework in place.</p>	
<p>Output 3. Community support and improved benefits. Less human-rhino conflict.</p>	<p>The number of farmers trained in growing and processing mentha, report on pilot electric fence study, workshop held and quality of strategy;</p>	<p>More than double planned uptake of mentha farmers. Socioeconomic study of cost benefit ongoing and results will be published in due course. Similarly HWC workshop in preparation due and reports will be coming on the impact of the electric fencing in both CNP and BNP and non palatable crops on human wildlife conflict. Indicators were appropriate</p>	
<p>Activity 3.1 <u>Public engagement</u> Communication of information Awareness, Dialogue, Media and Community Theatre Rhino campaign</p>	<p>The number of community education and awareness programmes conducted (public engagement meetings, theatres, community forums) and livelihood initiatives developed/supported and level of community involvement;</p>	<p>Education significantly improved at all levels, ages and status in BNP with more widely available education materials – posters, work books and a mobile education unit in place. Community theatre approach highly successful at local, national and international levels. Level of community engagement greatly enhanced to the point of active engagement in antipoaching and protection of the environment in BNP and to some extent in CNP and SWR.</p>	
<p>Activity 3.2 <u>Community assistance</u> Crop protection Strategy and livelihood development</p>	<p>Number farmers engaged, assessment of conflict and promotion of alternative mitigation approaches</p>	<p>Mentha uptake >60 farmers in BNP 1 large and 1 small processing plant in place and others now coming through communities self-funding as clearly economically highly successful but this is formally under evaluation. Conflict issues now under review and benefits from electric fencing assessed. This will be reported through a workshop to be held in October 2010.</p>	
<p>Output 4. Better governance, science based conservation, stakeholder integration.</p>	<p>New governance structures in place. Publications. Practical involvement of all stakeholders. Quality of annual site-specific work plans and their reviews, the quality of the revised Rhino Conservation Action Plan</p>	<p>Governance remains weak, a result of weak government post conflict. At a local level in BNP this has largely been resolved through integration of all stakeholders. There are now 100 Community Based APU staff and a model APU task force of integrated Army DNPWC and NTNC staff in process of formation and being funded by collateral support from USFWS and UKNTNC. Plans for these key initiatives are in final draft. The National plans are still pending more stability in Government and the DNPWC and NTNC.</p>	
<p>Activity 4.1 <u>Project management and conservation governance</u></p>	<p>Central and site based National project staff in place and active</p>	<p>The project management in Nepal was handled efficiently and effectively through good central and site managers at NTNC with regular extended</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
	Links to DNPWC and Army and Community for developing and executing project activities in place	field trips or residence by UK based staff/volunteers to facilitate, guide and encourage and complete aspects of the academic or project work. The liaison with DNPWC was effective in achieving a number of outcomes. The senior Army staff engaged were helpful and considerate of the project objectives and helped to resolve the key issues during the project that related to rogue elements of the antipoaching force in BNP.	
Output 5. Publications and publicity.	Publications, media outputs and events	Number of events, scientific publications in prep or press and media outputs were completed.	
Activity 5.1 Seminar UK	Seminars held	The Science was communicated at the Nepal Year of Conservation seminar event in London November 2009 organised by the project staff with an associated VIP dinner and fund raiser at ZSL. Presentations made at 2 Rhino Maydays in London and at IUCN SSC meetings 2008/9. A further presentation was made at the EAZA conservation event in UK in July 2010.	
Activity 5.2 Publications, press and publicity initiatives		Number of MSc projects in process and publications pending. Census published listed in annex. Reports on IAPS research, Human Wildlife Conflict mitigation, and economics and livelihood benefits of mentha processing and non-palatable crops are in preparation and publications or papers are expected. There were a number of local and international press reports related to the project the most notable being the "Rhino Bodyguards" story which explained the project in these terms, to a large proportion of the human population in the Indian sub-continent. Theatre approach brought the story of the rhino and the efforts of the project, to the attention of many audiences, locally and internationally. The subject was communicated through theatre at World Conservation Congress in Barcelona. ITC documentary on ZSL has a major feature on the project.	

Annex 2

Project's final logframe, including criteria and indicators

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>To re-establish effective capacity, systems, management and motivation for the conservation of the endangered Greater one-horned rhinoceros and the <i>Terai</i> grassland habitat in Nepal.</p>	<ul style="list-style-type: none"> • Cessation of the rhino population decline. • Take up of recommendations by DNPWC and NTNC for <i>Terai</i> grassland habitat invasive species management both in protected areas and community forests. • Take up of recommendations by DNPWC, NTNC and NGOs for buffer zone community livelihood, human wildlife (rhino) conflict and support programmes. 	<ul style="list-style-type: none"> • Census, reports and strategies. 	<ul style="list-style-type: none"> • Continuing improvements in the political process towards democracy and inclusive government.
<p>Outputs</p> <p>a) Improved capacity and systems to monitor rhinos and for anti-poaching.</p>	<ul style="list-style-type: none"> • DNPWC, NTNC and community forest programme staff trained and accredited in standardised monitoring and anti-poaching; minimum of 10 staff also trained as instructors (Y1). • Monitoring block systems established in CNP, BNP, SWR (Y1) • New standardised security, monitoring database and GIS systems established in CNP, BNP and SWR; minimum of 9 staff trained (Y1). • Restoration of community support/networks (Y1 and 	<ul style="list-style-type: none"> • Adopted monitoring/ anti-poaching system. • No of trained and accredited staff including instructors; quality of training material. • No of monitoring equipment bought and used regularly. • Extensive wildlife monitoring data in system database. • No of poaching reports. • No of staff trained in wildlife management. 	<ul style="list-style-type: none"> • Trained staff retained and stimulated instructors • Support for equipment maintenance and repairs • Well motivated field monitoring and anti-poaching staff

	<p>Y2).</p> <ul style="list-style-type: none"> ● DNPWC scouts and officers trained in wildlife management. 	<ul style="list-style-type: none"> ● Monitoring reports. 	
<p>b) Improved biological management of rhino populations and habitat.</p>	<ul style="list-style-type: none"> ● Total rhino census in CNP, BNP (Y1). ● Systematic block monitoring in CNP, BNP, SWR (Y1-3). ● Minimum of 9 DNPWC and NTNC trained in data quality control, analysis and status reporting (Y1). ● CNP and BNP Rhino population structure and demographics; 3 park and national status reports produced (Y1-3); report template developed (Y1). ● Viable populations established and intensively monitored; minimum of 4 staff trained in newer translocation and veterinary practices; 25 mahoots trained in elephant health care (Y1-2). ● Invasive Species (IS) trends, impacts and solutions: Research studies (e.g. MScs); workshop held, plan developed; 2 scientific papers submitted (Y1-Y2); Awareness activities undertaken. ● 4 DNPWC and NTNC staff trained in metapopulation management; Kenyan Darwin program visit (Y1). ● Strengthen cross border links with Indian protected areasPAs. ● Study on sanctuary approach undertaken and national Rhino Conservation Action Plan reviewed (Y2-3). 	<ul style="list-style-type: none"> ● Newly defined rhino management units. ● No of staff trained. ● No of annual status reports. ● Rhino census reports. ● Reports on invasive species trends, impacts and control solutions; plan. ● No of rhinos intensively monitored and protected in SWR. ● Scientific reports and papers. ● Report on cross-border initiative. ● Report on sanctuary study and revised national Rhino Conservation Action Plan. ● No of IS awareness activities. 	<ul style="list-style-type: none"> ● Retention of staff with specialised training skills and experience, and high motivation. ● Open data policy to enable verification. ● Trained elephants available to carry out systematic monitoring and census. ● Strategy adopted. ● Partner support.

<p>c) Community support and improved benefits. Less human-rhino conflict.</p>	<ul style="list-style-type: none"> ● Pilot electric fence, non-palatable mentha crops established for minimising crop damage; minimum 30 farmers benefiting through mentha processing plants; strategy developed for all areas (Y1-3). ● Dialogue and awareness programme established with focus on the most vulnerable and poorest buffer zone communities (Y1-3). ● Public engagement campaign undertaken (press, community theatres). 	<ul style="list-style-type: none"> ● No of conflict reports; no of farmers benefiting. ● Quality of community awareness material. ● No of community dialogue and awareness initiatives. ● No of public engagement programmes. ● No of community skills development activities initiated / supported. ● Human-rhino conflict resolution strategy. 	<ul style="list-style-type: none"> ● Mentha processing plants well maintained. ● Electric fence well maintained. ● Highly motivated park education and community awareness officers. ● Strategies adopted.
<p>d) Better governance, science based conservation, stakeholder integration.</p>	<ul style="list-style-type: none"> ● Strategy/governance change, financial and human resource commitment. 	<ul style="list-style-type: none"> ● Integration audit. ● Rhino "awareness" days for politicians and other stakeholders (Kathmandu and PAs) 	<ul style="list-style-type: none"> ● Supporting and properly integrated governance structure.
<p>e) Publications and publicity.</p>	<p>3 papers submitted for publication; radio and press coverage, information on partner websites.</p>	<p>No of papers submitted, radio and press items; quality of information on websites.</p>	<p>None.</p>

Annex 3 Project contribution to Articles under the CBD

Project Contribution to Articles under the Convention on Biological Diversity

Article No./Title	Project %	Article Description
7. Identification and Monitoring	25	A major advance has been in establishment of a patrol based rhino (wildlife) monitoring system in the Terai with excellent functionality in Bardia, improving functionality in Chitwan and some functionality in Suklaphanta although numbers of rhino are small in the latter and not considered viable and resources were focused on the other areas.
8. In-situ Conservation	20	The impact of the project has been to better conserve both the rhino and the habitat. There has been elimination of poaching in Bardia and progress in protection in Chitwan with a much better understanding of the main habitat issues around invasive plant species. The spin-off benefits for other species such as tiger, and other carnivore and herbivore conservation in general are significant.
13. Public Education and Awareness	25	The local awareness of the problems of conservation of rhino and habitat are much better understood in the communities at all levels. Their engagement has been enhanced to a point where they have considerable influence on the outcome of the conservation measures taken. The project has also shaken up the complacency around the protection methods and exposed the serious governance issues at all levels, in particular the corruption of the protection forces and in general, the break down in the authorities competence to manage.
Other Contribution	30	There was significant contribution to development of research activities especially with respect to invasive plant species in Chitwan. There have been improvements in the authority's awareness about the health of rhino and other animals and of the ecosystem. Considerable technical and information exchange has taken place, and the livelihood opportunities and improved mitigation against human wildlife conflict have been significant in both Bardia and Chitwan.
Total %	100%	Check % = total 100

Annex 4 Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1a	Number of people to submit PhD thesis	1
1b	Number of PhD qualifications obtained	0
2	Number of Masters qualifications obtained	4 (UK) 2(local)
3	Number of other qualifications obtained	0
4a	Number of undergraduate students receiving training	0
4b	Number of training weeks provided to undergraduate students	0
4c	Number of postgraduate students receiving training (not 1-3 above)	6
4d	Number of training weeks for postgraduate students	72
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(ie not categories 1-4 above)	1
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	(148) 6 Indian FD and WWF staff 4 education 30 teachers 40 monitoring and census 2 wildlife health staff 20 Scene of crime 4 theatre 34 (17*2 guard posts - Chitwan) 8 (4*2 guard posts - BNP)
6b	Number of training weeks not leading to formal qualification	71
7	Number of types of training materials produced for use by host country(s)	4
Research Measures		
8	Number of weeks spent by UK project staff on project work in host country(s)	51
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	3
10	Number of formal documents produced to assist work related to species identification, classification and recording.	1
11a	Number of papers published or accepted for publication in peer reviewed journals	1 + 4 (being prepared)
11b	Number of papers published or accepted for	0

Code	Description	Totals (plus additional detail as required)
	publication elsewhere	
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	0
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	1
13a	Number of species reference collections established and handed over to host country(s)	0
13b	Number of species reference collections enhanced and handed over to host country(s)	0
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	2
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	5
15a	Number of national press releases or publicity articles in host country(s)	4
15b	Number of local press releases or publicity articles in host country(s)	1
15c	Number of national press releases or publicity articles in UK	2
15d	Number of local press releases or publicity articles in UK	0
16a	Number of issues of newsletters produced in the host country(s)	0
16b	Estimated circulation of each newsletter in the host country(s)	0
16c	Estimated circulation of each newsletter in the UK	0
17a	Number of dissemination networks established	0
17b	Number of dissemination networks enhanced or extended	0
18a	Number of national TV programmes/features in host country(s)	1
18b	Number of national TV programme/features in the UK	1
18c	Number of local TV programme/features in host country	0
18d	Number of local TV programme features in the UK	0
19a	Number of national radio interviews/features in host country(s)	1

Code	Description	Totals (plus additional detail as required)
19b	Number of national radio interviews/features in the UK	0
19c	Number of local radio interviews/features in host country (s)	1
19d	Number of local radio interviews/features in the UK	0
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	35542
21	Number of permanent educational/training/research facilities or organisation established	1
22	Number of permanent field plots established	0
23	Value of additional resources raised for project	\$195000 137500 pounds

Annex 5 Publications

Type *	Detail	Publishers	Available from	Cost
(eg journals, manual, CDs)	(title, author, year)	(name, city)	(eg contact address, website)	£
Manual	IUCN – The Greater One-Horned Rhinoceros Monitoring Instructors' Training Manual, R Amin et al, 2010 – Official printed version following implementation	IUCN SSC AsRSG	IUCN AsRSG ZSL, Regents Park, London NW1 4RY	Print and postage cost
Poster set	IUCN – The Greater One-Horned Rhinoceros Monitoring Instructors' Training Posters Set, R Amin et al, 2010	IUCN SSC AsRSG	IUCN AsRSG ZSL, Regents Park, London NW1 4RY	Print and postage cost
Manual	IUCN Rhino Translocation Guidelines, R Emslie, R Amin, R Kock, 2009	IUCN SSC	IUCN AsRSG ZSL, Regents Park, London NW1 4RY	Print and postage cost
Manual	The Status and Distribution of Greater One-Horned Rhino in Nepal, S Jnawali et al, 2010	DNPWC, Nepal	DNPWC	Print and postage cost
Manual	The Rhino Scene of Crime Investigation Manual, R Potter et al, 2008	NTNC / ZSL	ZSL	Print and postage cost
Poster	Grassland Education Poster, 2008	NTNC / ZSL	ZSL	Print and postage cost
Report	Cost Benefit Analysis of Mentha/Aromatic Plants, Lydia Tiller	NTNC/ZSL	ZSL	Print and postage cost
Report	Vet clinic assessment, Hugo Richardson	NTNC/ZSL	ZSL	Print and postage cost
Publication - manuscript	The Status and Distribution of Rhino in Nepal	NTNC/ZSL	NTNC	Print and postage cost

Publication	Bardia paper	Pachyderm	Pachyderm	PDF
Publication - manuscript	Cost Benefit Analysis of Mentha / Aromatic Plants	PENDING	-	-
Publication - manuscript	Vet clinic assessment	PENDING	-	-

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Additional project annexes can be provided on request – two publications are attached.