



Darwin Initiative Annual Report

Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders: it is expected that this report will be about 10 pages in length, excluding annexes



Submission Deadline: 30 April 2011

Darwin Project Information

Project Reference	EIDPO-040
Project Title	The Assam Haathi Project
Host Country/ies	India
UK contract holder institution	North of England Zoological Society (Chester Zoo)
Host country partner institutions	EcoSystems-India
Other partner institutions	-
Darwin Grant Value	£150,000
Start/end dates of project	October 2010 – 30 September 2012
Reporting period	October 2010 – April 2011 (6 months)
	Annual Report 1
Project Leader name	Ms Alexandra Zimmermann
Project website	www.assamhaathiproject.org
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1. Project Background

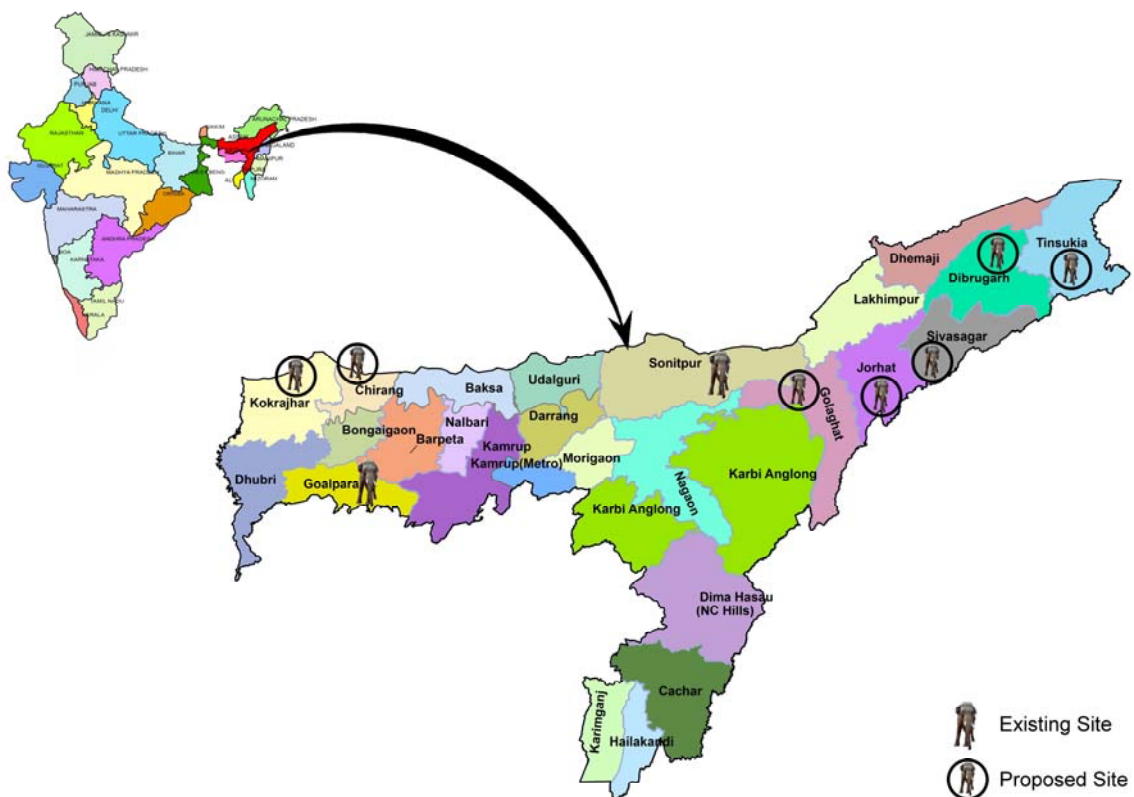
North-east India has been highlighted by expert groups such as the IUCN Asian Elephant Specialist Group as a top priority for elephant conservation, with a particular need for the mitigation of human-elephant conflict (HEC). The forests of the Himalayan foothills contain one of last remaining large elephant populations but also one of the most acutely threatened. Unsustainable extraction of forest products and expansion of agriculture are fragmenting habitat, the most visible and immediate effect of which is direct conflict between elephants and people. This conflict has become an annual occurrence which results not only in loss of crops, but also destruction of houses and loss of human lives, and in turn, retaliation against elephants. Long-term strategies for elephant habitat restoration and conservation are needed, but meanwhile community tolerance levels are rapidly deteriorating. This needs to be redressed urgently so that rural communities re-gain their willingness to protect forests, biodiversity and contribute to regional conservation efforts.

Through our original (“main”) Darwin project we gained excellent insight into the complexities of HEC in Assam and earned acknowledgment from other organisations who now come to us for advice on matters concerning HEC. The original project targeted two sample regions of Assam, but HEC is a problem across most of the state, so are now scaling up activities to achieve a greater impact.

Human elephant conflict occurs in approximately 16 (out of 27) districts in Assam in varying degrees. We have identified four main regions in addition to our two existing project sites where HEC is a serious problem. We aim to work in 10 new villages across seven sites: Goalpara, Sonitpur, Chirang, Baksa, Golaghat, Jorhat, Sivasagar and Dibrugarh.

The work is organised into five sub-areas (which form the “outputs” in the logical framework):

- 1) Crop-raiding and damage protection measures is being implemented in worst-affected villages, building capacity among villagers and new field staff and reducing the frequency of damage.
- 2) We are scaling up our pilot work with sustainable livelihoods by helping communities start up small businesses. This is particularly important for villages severely affected by elephants and those with a high percentage of BPL (below poverty line) households.
- 3) Education events such as workshops, field trips, demonstrations and teacher training proved popular in the original project and are continuing and being expanded.
- 4) We are working with selected pilot villages on habitat protection and sustainable fuel sources, by setting up community-based re-forestation areas with native flora at habitat margins, establishing plantations for firewood, and providing more fuel-efficient stoves for households.
- 5) We are continuing with our integrated research, expanding to an Assam-wide survey of conflict patterns, the data generated will inform long-term strategic planning. We are also evaluating each of the above four components, measuring key indicators at the start and at project end, so that lessons for best practice can be documented and shared.



2. Project Partnerships

In this project, NEZS provides expertise in human-wildlife conflict mitigation, GIS technical skills, and the design of research protocols, and is responsible for overall coordination, financial controlling, strategic planning and liaison with media or other external parties outside India. Host-country partner EcoSystems-India (ESI) is an Assamese NGO specialising in community-based conservation and education. ESI provides the expertise in community-based conservation and participatory management, and is responsible for the recruitment and supervision of field staff, monitoring of work-plans, management of local finances, purchase of local materials and equipment, and the production of reports and dissemination of outputs within India. Ecosystems also briefs the Forest Department, Govt of Assam, regularly on the progress of the project.

To implement effectively the different project activities across the large geographical extent of the state, we collaborate with several national and regional organizations which have local outreach capacities:

The *Pygmy Hog Conservation Programme* (Darwin partner to project 15-017) provides our project with technical skills and advice for the construction and maintenance of solar-power fencing, solar lighting and field surveys. It also supports select community activities in our new villages in Chirang/Baksa region and takes part in our project meetings and provide valuable feedback and input.

The *Centre for Environmental Education* (Darwin collaborator to project 06-017) advises our project on educational aspects and works with us to source training materials and run workshops. Their regional experience and specialisation helps ensure quality control in the educational components of this project and wide dissemination across the region. CEE was a very helpful partner in the previous (main grant) phase of our work.

The *Energy and Resources Institute* (TERI) is a national research institute formed to develop sustainable solutions to global problems in energy, environment and development. TERI will continue to provide inputs into our livelihood training programmes; assisting with training workshops on sustainable agriculture and cultivation of alternative cash crops, including chilli.

Nature's Foster is a member-based NGO promoting community based initiatives, as well as field research for biodiversity and natural resource conservation in lower Assam. Its main areas are alternative livelihood through self-help groups, watershed management, research on endangered primates, human-elephant conflict and avifauna of wetlands. Nature's Foster's engagement in the project's field activities focuses on assistance in the implementation of village-level outreach in Baksa and Chirang districts in lower Assam, where they have local knowledge.

Nature Conservation Foundation (NCF) has expertise in planning, designing and running long-term research and conservation projects in India. Several NCF projects are community-based conservation initiatives including ecorestoration activities in degraded elephant habitat landscape. We draw on NCF's expertise and experience to plan and develop a strategy for the habitat restoration aspects of our work. They provide technical inputs for the planning and execution of habitat improvement and restoration measures in the existing project sites.

Mahila Shakti Kendra (MASK) is a registered federation of 93 self-help groups (SHGs) in Sonitpur district. MASK's understanding of the local livelihood issues are valuable in assisting us in the further development of our capacity building programme. They provide inputs for identification of self help groups, assessment of livelihood training needs as well as conducting of workshops on income generating schemes.

Darikati Ajon Swasthya Kendra (DASK) is a grassroots organization with a team of trained young active volunteers and leaders who work with communities to promote sustainable resource use and create sustainable livelihoods. DASK is involved in the planning and execution of our livelihood programme for self-help groups (SHGs). They will provide training on handicrafts and help in developing market linkages for the sale of the products.

Aaranyak (Darwin grant partner in EIDPR101) is an environmental organization of northeast India working towards biodiversity conservation and sustainable resources management in the region. It implements numerous projects and programmes on a variety of environmental issues concerning the northeastern Himalayan landscape. Aaranyak is teaming up with our project on elephant crop raiding interventions in lower and upper Assam where it has staff on the ground and know the regions very well. They collaborate with us in the identification of project villages, implementation of interventions, and monitoring of elephant movements.

While scoping for selection of new project villages in this first half year of our project we have teamed up with two additional partners:

Unified Forest Conservation Network – Bodo Territorial Council is a consortium of 14 voluntary organisations operating in lower Assam with focus on Manas Biosphere Reserve. A relatively young body, its members aim to guard the forests of BTC areas through formation of *forest protection bands* and promote sustainable development in the local villages. This project collaborates with the Network to undertake livelihood and dissemination of interventions in the fringe villages of Manas Biosphere Reserve where HEC is major problem.

I-Card (Institution of Culture and Rural Development) is a registered charity working at grassroots on rural development and youth and gender empowerment among the tribal *Mising* community in Upper Assam districts. I-Card and the project will work together to disseminate HEC interventions in local villages, capacity building of youth leaders for awareness generation and of SHGs for additional livelihood options.

The Project Leader also leads the Darwin project “Securing Human-Elephant Coexistence in Sumatra” (17-024), and in December 2010, four project field staff from the Sumatra Darwin Project visited this Assam Darwin project, for field staff development opportunities. The Sumatran team spent nine days in Assam visiting the field sites in Sonitpur and Goalpara, interacting with various stakeholders, learning from demonstrations and discussing ideas and challenges with our field teams. Some of our field staff will travel to Sumatra in May 2011.



Field staff from Darwin Project 17-024 (Sumatra) visiting this Darwin Project in Assam.

3. Project Progress

The expansion of the geographical scope of this project includes new areas in addition to the old project sites: Sonitpur and Goalpara. Out of the 10 new villages, eight villages will be distributed across districts in Lower and Upper Assam, namely Chirang, Golaghat, Jorhat, Sibsagar and Dibrugarh. The land-use pattern in the new regions is similar to our previous sites comprising riverine plains bordered by hills, agricultural fields dominated by rice cultivation, homestead gardens, dense and scattered villages, tea plantations, protected areas, degraded secondary forest and forest remnants.

3.1 Progress in carrying out project activities

A project planning meeting for the new phase with both Goalpara and Sonitpur field staff was conducted. The agenda included identification of new villages, review of activities in existing sites, dissemination of information and interventions in new sites in partnership, and possible withdrawal strategy for old project villages. This was followed with visits to the different districts and meetings/consultations with different stakeholders such as villagers, community leaders, partner NGOs, and forest department officials. We have selected two new villages and shortlisted 19 villages for final selection of 8 new project villages.

Activity 1.1. Implementation of crop protection methods in 8 new project villages

Watch towers: Regular inspection of existing watchtowers in Goalpara and Sonitpur is being continued. A new watchtower (wooden and concrete) at Rikamari village, Sonitpur was erected with contribution in kind from the villagers.

Chilli smoke was used in the old project villages and by field monitors in their own villages. Five villages in Sonitpur and four in Goalpara used this to chase away the elephants.

Chilli fencing: This technique has become popular in the project sites. In Goalpara, installation of a (one) kilometre long chilli fence in the project village Nichinta, in November was successful in protecting 40 ha of paddy fields belonging to two villages. The fence was re-greased in December. New chilli fences were installed at Morisuti (200m), Dhulapadung Tea estate (250m), Thulotika (400m), Dhankhana (300m) Rupajuli (200m) villages in Sonitpur. Regular re-greasing of the rope is required in order to maintain the effectiveness of this method.

Chilli dust: The Goalpara team undertook trials of this new idea for protecting harvested rice in the granaries. This involves sprinkling of chilli powder (dust) on the ledges of the granary walls, and covering the bamboo storage bins with plastic sheets, onto which chilli has been dusted. In case plastic sheets are not available, old newspapers or a thin cloth sheet also works. When pilot-tested in Lakhipur, the “chilli-dusted” granaries remained untouched, while others in the same village were broken into by elephants. Subsequently, 10 households (five each) in Choto Sigri and Limbu para villages used this method to safeguard their granaries.

Chilli nursery: In Sonitpur, 450 chilli plants were distributed to households. Meanwhile the demo plot in Goalpara is raising 2000 chilli plants of local *garo* variety and about 100 of the *bhot* variety. The plants will be distributed and the fruit used as deterrents. The local branch of Krishi Vigyan Kendra, the research and extension wing of Indian Council for Agriculture Research, Dudhnoi, Goalpara district has solicited our project’s assistance to establish a chilli nursery (*bhot jolokia*) demo plot in Barigaon village in our project site area.

In October, the project helped two tea estates Goiraliie and Dhulapadung in Sonitpur, to identify elephant corridors within their boundaries, and install 16 “elephant crossing” signboards to caution the workers and their families.

Search lights: A total of 41 search lights (which are used to deter elephants) have been distributed to various villages throughout Sonitpur (14 lights in 10 villages) and Goalpara (27 lights in 16 villages). Discussions with villagers reveal search lights as one of the most popular methods.

Electric fencing: project villages with which we have worked since the previous grant continue to undertake regular maintenance of the electric fencing in Sonitpur and Goalpara. The beneficiary households of Rupajuli, Sonitpur are raising money to add to the corpus of maintenance fund for electric fencing. A section of their electric fencing is awaiting repairs. The energiser in Bengkanda village, Goalpara was replaced, with inputs from the community managed maintenance fund.

Preliminary meetings were held with the households of Bamungopa, Goalpara to finalise the modalities of establishing a fence maintenance fund as well as the upkeep of the fence. All the 43 households contributed Rs 500 each in addition to labour and wooden poles towards the installation of the 2 km fence in November. Further, a resolution was passed by the villagers that each household will contribute RS10 (approx 15 pence) monthly to the maintenance fund. This fence will protect the homes and 80 acres of homestead gardens.

Plans are afoot to install a 5 km solar powered fence in the new project village Sourang located in the fringe of Manas National Park, Chirang district. The preliminary survey and design of the fence is complete. Owing to disturbed law and order conditions in the district, the installation has been deferred. The fence will safeguard property of 108 households, homestead gardens and some agricultural fields. The Pygmy Hog Conservation Programme is assisting with this.

Household electrification: a hamlet consisting of 20 households located at the fringe of Hatigaon village (new), Goalpara was provided solar lighting systems to ward off elephants. Five solar modules (35 Wp each) and a storage battery were provided to power two 9W CFLs in each home. The lights are operational for 2.5 hours in the evening and the community is extremely contented as grid based electricity is not likely to reach them in near future. Each beneficiary household contributes Rs 20/monthly to the maintenance fund. Families are saving an average Rs 200-300 /month, which otherwise was spent on kerosene lamps for lighting.

Maintenance: All old and new interventions (watch towers, trip wire, searchlights, electric fencing, chilli rope etc.) installed by the project continue to be being maintained by the community members. Any resultant expenses are covered by the communities and funds are managed by an informal committee guided by project staff members.

Activity 1.2. Hands-on training and workshops to be held in the project villages

We have had participation of 60 farmers in training session for chilli smoke and chilli rope in Goalpara, which includes a new project village Kalyanpur. In addition 18 field monitors under the project were also trained. In Jorhat district, team members demonstrated the use of chilli deterrents at I-Card (partner organisation) premises, and the villages of Panbari (18 participants), Amlakhisinga (8 farmers), Pukhuria (4 village elders) and Nagapathar (4 households). These demonstrations were conducted during state wide HEC survey and reconnaissance for selection of new project villages. The Sonitpur team demonstrated the use of chilli smoke and fences 7 forest guards at the Kabu Tiniali Beat Office, Dhemaji district in Upper Assam. Also 6 farmers from Dharikati village were trained in chilli smoke and fence preparation. We also have been approached by the Forest Department in Jorhat to extend help to HEC affected villages through training in use of chilli deterrents and provision of searchlights.

Activity 2.1. Development of supplementary livelihood ideas and business planning

Following the success of the cooperative food preservation venture started by members of self help groups in Sonitpur, project staff helped to build the market linkages with vendors, retail outlets, sourcing of packaging material and publicity for the sale of food preserves. This has helped the cooperative to almost break even within the first year of their operation. In October, we helped to register the venture as a registered small enterprise called *Tripti Food Products* with the Assam Industrial Development Corporation to avail of subsidies and benefits offered under it. We have completely withdrawn from this initiative as it has achieved its goal, but continue to offer advisory services with no financial or technical support.

A follow-up workshop on agriculture brought together 56 farmers from 8 different villages, including two project villages in Sonitpur. Apart from receiving training on cultivation of horticultural crops and spices from the Agriculture Department, 17 participants got their soil samples tested at the government aided laboratory.

In collaboration with Pygmy Hog Conservation Programme, the project promoted additional livelihood options through self help groups (SHGs) in two new villages (Sourang and Thaijoguri) in Chirang and Baksa districts, respectively. These villages have dominant indigenous Bodo population. In Sourang, 4 SHGs, comprising 67 member households, are engaged in raising commercial bamboo (0.50 ha) and rubber (1 ha) plantations; and cultivation of mustard and turmeric for sale. In addition to internal lending operations, two SHGs have received government loans for micro-enterprise development.

Of the 3 SHGs (42 members) in Thaijoguri, two received a sewing machine each under a government scheme. Further 185 arecanut trees are taken on lease by them for commercial sale. SHG members were also engaged in production of woven cloth products, along with their regular lending activities.

In Goalpara, a SHG motivation camp and 2 day training on pig farming was attended by 43 participants from 9 different SHGs representing 7 villages. Following the training, 12 SHG members are raising pigs successfully. There is a demand to organise more such training on other animals (goats, poultry, and ducks) too.

Activity 2.2. Training for production of products

This activity is scheduled to begin only in year 2 (from July '11), but we have already pursued some opportunities that came up. Two field office staff underwent training in manufacture of environment friendly disposable dishes from betel nut leaf in Barpeta, organised by a local NGO *Dhriti*. We plan to establish micro-enterprise based on this knowledge in existing and new project villages. Further, three team members went on an exposure trip to partner *Nature's Foster's* project village in Kokrajhar district to learn about their poultry based livelihood initiative "*Hen can change a man*". Under this scheme, each beneficiary family is provided 4 hens free of cost, which will be raised for meat and egg production. Once the production and sale of the poultry flourishes, the beneficiary will have to return the four birds given to him/her initially. Having observed the success of this venture, we hope to popularise it in our project areas.

Activity 2.3. Marketing and sales

This activity was not scheduled to begin in until Year 2, but SHGs in Sourang and Thaijoguri are already engaged in marketing and sale of their hand woven cloth products as well as sale of spices and horticulture produce.

Activity 3.1. Disseminate further copies of our handbook

Around 100 copies of the handbook "Living with Elephants in Assam" were distributed. The recipients included HEC affected villages in non-project villages, educational institutions, youth clubs, Forest Department officials, visiting NGO members, tea garden managers, researchers, practitioners and media.

Activity 3.2. Produce and distribute further educational materials

The design of educational materials such as exhibition panels, posters, information cards on interventions is well underway.

Activity 3.3. Workshops and training activities held with teachers and students

Public meetings were held in 6 villages in Goalpara to highlight the issues related to human-elephant conflict, two of were also attended by education staff from Chester Zoo. The visiting Darwin project Sumatra field team also interacted with village elders during a public discussion in Goalpara. Over 200 villagers have attended such events. In addition, a day long villagers' motivation and environment awareness education programme was carried out with huge success in Bamunghopa with more than 100 villagers participating. In Jorhat too, informal discussions and demos in 7 villages on elephant behaviour, crop raiding and interventions were undertaken. A local voluntary body, *Bokakhat Library and Information Centre* has offered its services to collaborate with us on capacity building of youth and environment awareness campaign with focus on elephants through use of its mobile library and inclusion in their ongoing programmes.

Four environment awareness events for rural schools were conducted in Sonitpur. With local students having limited knowledge of and access to information on biodiversity issues, the workshops exposed them to range of activities and information. A total of 105 students from a primary school Thulotika (30), and 3 middle schools (Amabaribari: 22, Shankar Dev Sishu Niketan: 20, Bapuji middle school: 33) enthusiastically participated in the interactions. In addition, 22 men and women also attended the event at Thulotika. These included illustrated talks, discussions, games, and drawing sessions. Maggie Esson from Chester Zoo (NEZS's Education Programmes Manager) helped to conduct three of these events. It was heartening to observe that 11 participants (12-14 years) at Bapuji Middle school want to become volunteers for the project. They also requested assistance for the creation of a club for elephant awareness.

Activity 4.1. Background research and demarcation of potential replanting areas

This activity is scheduled to start in Year 2. Consultations have been held with our partner *Nature Conservation Foundation* on providing training to project field teams on eco-restoration protocols such as establishment of nursery, selection site, selection of native plants, and monitoring. A training workshop and field visits by resource persons from NCF are scheduled for April 2011. The workshop is expected to develop guidelines and action plan for reforestation activities.

Activity 4.2. Establish nursery and plant out (both for reforestation and firewood)

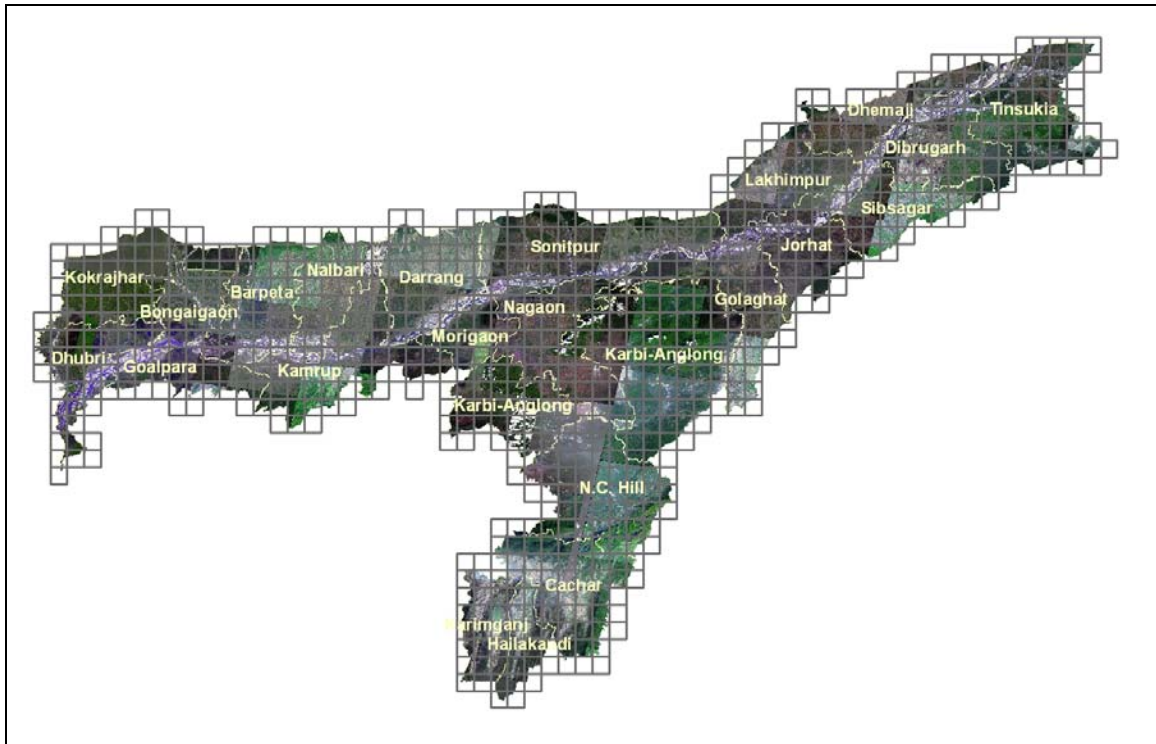
This activity will begin in year 2.

Activity 4.3. Trials of alternative stoves, distribution and demonstrations

Dr DC Baruah, Head, Department of Energy Studies, Tezpur University, has extended technical assistance and lab support for development (design to fabrication) of improved cook-stoves (2-pot device with chimney) and water heating device to be disseminated. These devices will be field tested in project villages in the next quarter.

Activity 5.1. Assam-wide HEC survey

As a prelude to expansion of project areas under the project, an assessment of presence of wild elephants and HEC incidences in all the districts of Assam has been initiated. The methodology, protocol, data collection sheets have been developed and the survey is underway. Out of 27 districts, survey has been completed in 12 districts (Dhubri, Bongaigaon, Goalpara, Chirang, Barpeta, Sonitpur, North Lakhimpur, Dhemaji, Golaghat, Jorhat, Sibsagar, Dibrugarh), partially completed in 5 (Kokrajhar, Baksa, Udalguri, Nagaon, Morigaon) districts, and pending in remaining 10 (Tinsukia, Karbi Anglong, Dima Hasao, Cachar, Hailakandi, Karimganj, Darrang, Nalbari, Kamrup Rural, Kamrup Metro districts. Preliminary mapping of the survey results is in progress.



Our state-wide HEC mapping exercise involves a grid superimposed onto a map of Assam, and each square is checked on the ground for presence/absence and perceived severity of conflict.

Activity 5.2. Evaluation of effects of interventions and self-help capacity of villagers

Both Sonitpur and Goalpara have reported no loss or negligible loss of crops, property and lives/injury between October 2010 and March 2011. The combined use of different interventions has resulted in almost 100% saving of agriculture produce in Nichinta, Goalpara and other project villages in Sonitpur.

Activity 5.3. Evaluation of livelihood schemes

Through formation of self help groups in the new project villages, member households (117) have acquired new skills and honed their existing ones in weaving, handicrafts, food preservation, betel nut plate making, piggery, agriculture, and sewing. The project is attempting to reduce resource use from Manas NP and enhance household incomes by encouraging sustainable cultivation of cash crops (ginger, vegetables, rubber, etc.) and small timber (bamboo).

Activity 5.4. Evaluation of knowledge and attitudes as a result of education tools and events

See activity 3.3 above. Baseline observations done, evaluations will follow.

Activity 5.5. Evaluation of model reforestation, firewood plantation and fuel stove trials

See activity 4.3 above. Baseline observations done, evaluations will follow.

3.2 Progress towards project outputs

Progress has been good, considering, a) that this project is only 6 months old and all of the planned activities are well underway and working towards the project outputs. (Please see Annex 1 for details of progress on each of the outputs), and, b) that there have been some unforeseen challenges: fieldwork in lower Assam districts had to be delayed because of escalated ethnic conflict between Rabha and Garo communities in January 2011. The situation was such that some villages including Hatigaon, Sagunbahi and Bangkanda in the Goalpara project site had to evacuate to safer areas. We decided to dismantle the power fencing equipment in Segunbahi for fear of theft and vandalism. The equipment was reinstalled in February after the people returned home. We were then further advised by local district administration to discontinue fieldwork in some areas following the kidnapping of WWF volunteers (in February). Though the situation has improved marginally, the field teams are exercising caution before resuming fieldwork. In addition, owing to unavailability of suitable field staff for recruitment, the planned outputs attributed/related to operations in new project villages in Upper Assam had to be delayed.

3.3 Standard Measures

Table 1 Project Standard Output Measures

The application form for this Post Project did not ask us to specify *planned numbers*, so we have not done so, and these columns are left blank

Code No.	Description	Year 1 Total (= total to date)	Number planned for reporting period	Total planned during the project
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	3		
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)	335		
6B	Number of training weeks to be provided	18		
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country	4		
8	Number of weeks to be spent by UK project staff on project work in the host country	5		
11B	Number of papers to be submitted to peer reviewed journals	1		
12B	Number of computer based databases to be enhanced and handed over to host country	0		
14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings	0		
14B	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/disseminated.	8		
15B	Number of local press releases in host country(ies)	1		

Code No.	Description	Year 1 Total (= total to date)	Number planned for reporting period	Total planned during the project
15C	Number of national press releases in UK USA	1		
17B	Number of dissemination networks to be enhanced/ extended	1		
18B	Number of national TV programmes/features in UK USA	1		
19A	Number of national radio interviews/features in host county(ies)	0		
19B	Number of national radio interviews/features in UK	0		
19C	Number of local radio interviews/features in host country(ies)	0		
19D	Number of local radio interviews/features in UK	0		
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	0		
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work	AUD 5000		

Table 2 Publications

Type	Detail	Publisher	Available from	Cost £
Peer-reviewed journal	Davies.T.E, Wilson.S, Hazarika.N, Chakrabarty.J, Das.D, Hodgson.D.J, Zimmermann. A. (2011, in press) <i>Effectiveness of Intervention methods against crop-raiding elephants</i> . Conservation Letters.	<i>Conservation Letters</i> . John Wiley & Sons, Inc., New Jersey, USA	http://onlinelibrary.wiley.com/doi/10.1111/j.1755-263X.2011.00182.x/abstract & PDF from Project Leader	Project staff time.
Magazine article	Astbury.E (2010) <i>Moving forwards in Assam</i> . Z magazine. Chester Zoo.	Chester Zoo, UK	PDF from Project Leader	Covered by Chester Zoo
MSc thesis	<i>Physical composition of fodder, crops and crop raiding pattern of wild elephants in Sonitpur district of Assam</i> . Das BJ , 2011	College of Veterinary Science , AAU, guwahati	EcoSystems-India Guwahati, Assam	Covered by previous Darwin grant
Newspaper Article (India)	Translated from Assamese Chester Zoo to help minimise human-elephant conflict: <i>Assam Haathi Project's contribution to peaceful coexistence</i> . Ranjit Sarma, 1 Jan 2011	Asomiya Pratidin, Guwahati	www.asomiyapratidin.co.in	No cost to the project
Newspaper Article (UK)	<i>Are elephants scared of spice?</i> The Independent. 2 March 2011	The Independent	www.independent.co.uk & PDF from Project Leader	No cost to the project
Newspaper Article (USA)	<i>Last stand of the Asian Elephant</i> . New York Times. 20 March 2011	New York Times	www.nytimes.com & PDF from PL	No cost to the project

3.4 Progress towards the project purpose and outcomes

The project's purpose is to mitigate human-elephant conflict across Assam, allowing communities to pursue sustainable livelihood schemes and support activities for elephant and habitat conservation. Progress towards the outcomes has been very good already (this project began only 6 months ago). Please see Annex 1 showing comments against the original logframe. The assumptions hold true so far and the indicators are proving to be appropriate metrics for measuring the outcomes.

3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The project is well on its way to making a real and immediate difference to the lives of community members that are living with elephants in the project target areas. The project is already playing a role in saving human lives, reducing serious injury and losses due to property and crop damage caused by elephants (as demonstrated by almost total protection of crops, property and safety in our core project areas). As such it has a very strong component towards equitable sharing of the costs of biodiversity conservation borne by local communities.

4. Monitoring, evaluation and lessons

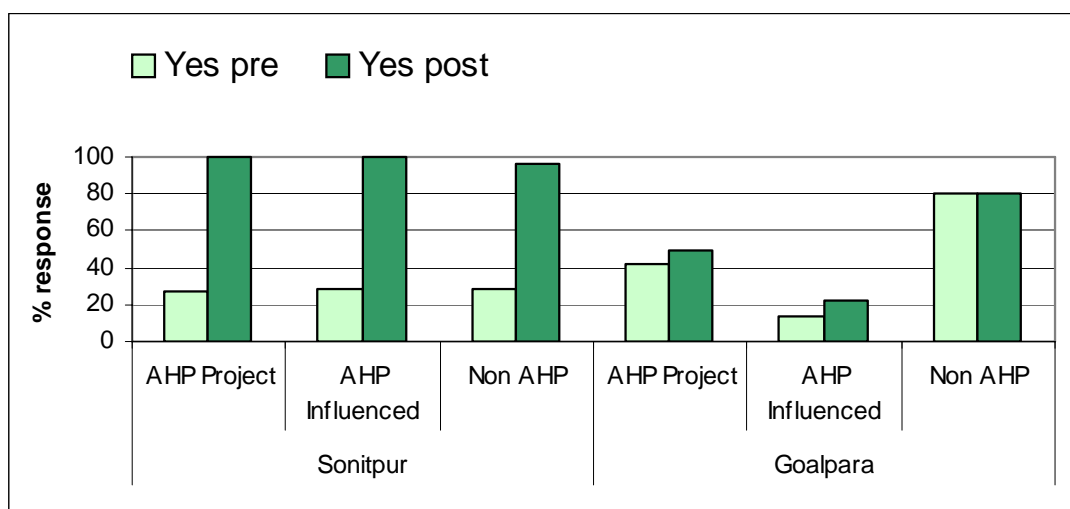
Monitoring of conflict is done by using standardised protocol methods developed throughout the first (main) project, continued here in the post project. Our internal monitoring plan works well, and with regular feedback and guidance the quality and consistency of data collected by field staff is reliable. As with the original project, the use and effectiveness of the interventions are being monitored continuously and monthly log sheets are maintained by field staff. Any new staff member joining the project is fully trained in all our methodologies and regular monthly meetings are held among staff in Assam to discuss progress and challenges. The project is moving forwards using surveys to assess livelihood strategies and dependency and to assess the use of firewood and stoves. We are also collecting survey data from across all of Assam, information which will be analysed to identify HEC hotspots later and define priority areas for further work. A key indicator of our project's success continues to be the fact that a number of communities have and continue to independently approach us requesting collaboration. The handbook has also been well received in areas which have previously received no HEC assistance, and data to prove this are currently being prepared for publication. Our workshops are well received and to monitor this, evaluation forms are available for participants to give feedback to us.

5. Actions taken in response to previous reviews (if applicable)

Not applicable.

6. Other comments on progress not covered elsewhere

Preliminary analyses of our before-and-after evaluation of the handbook (*Living with Elephants in Assam*) are showing increased knowledge about the status of elephants and has revealed that the reasons why elephants crop-raid is understood by villagers. The survey results showed that the majority of people felt that elephants and forests should be protected, and that this perception increased in some areas after the distribution of the handbook. Villagers were also more aware of the mitigation methods which could be used *after* reading the handbook. In the Sonitpur study area, the number of people who felt that it is possible for elephants and people to share the landscape increased dramatically *after* receipt of the handbook.



Preliminary graph showing the percentage of respondents before and after dissemination of the handbook, who felt that it was possible to live alongside elephants.

7. Sustainability

This project's central theme is conflict mitigation through safety and sustainable livelihoods. It can realistically aim to reach a point at which conflict is reduced to a tolerable level (no deaths, and income losses that communities can offset with other incomes) and in which the sustainability of micro-enterprises and habitat protection is very likely to persist in the long-term. Human-wildlife conflicts have always existed and can never be completely eliminated, it would therefore be unrealistic to aim to resolve all issues 100%. Within the short time frame of this project we are confident that we can bring HEC under control and establish solid livelihoods activities for the long-term.

With the substantial amount of capacity building in this project NEZS foresees a point where it can withdraw and hand over any future work to EcoSystems-India (ESI). ESI in turn foresees a point where it withdraws from working intensively on the ground with communities and step into an advisory role. However, NEZS has a strong commitment to supporting ESI, so if future challenges or new opportunities should arise and ESI so wishes, we would find ways to continue to strengthen the legacy of the Assam Haathi Project even beyond this Darwin grant.

8. Dissemination

Since October 2010, information about the project has been presented through a variety of formats including. All presentations, publications, powerpoints and signs show the Darwin logo and/or specifically acknowledge the Darwin Initiative.

- Interpretation in Chester Zoo's elephant exhibit, seen by most of 1.2 million visitors/year
- Further distribution of the handbook "*Living with Elephants*" (in English and Assamese) to villagers in Assam and available to download online
- Publications: 1 scientific paper, 1 magazine article, 3 news items (including New York Times and The Independent)
- The project website www.assamhaathiproject.org, which is updated regularly
- Presentations by N Hazarika to Department of Zoology, Dhaka University, Bangladesh, Wildlife Trust of Bangladesh (WTB), Dhaka, and Forest department, Govt. of Bangladesh, Dhaka organised by Prof A Islam, Dhaka University/WTB.
- Meeting with Chief Wildlife Warden, Forest Department, Government of Tripura
- Special invitee to *Sustaining Commons: Sustaining our Future* 13th IASC International Conference, Hyderabad, India organiser: Foundation for Ecological Security
- Presentation by N Hazarika and consultation as a resource person at an experience sharing workshop on "*Communities' Initiatives for Conservation of Biodiversity* organised by NEPED and SACON, Kohima, Nagaland
- Presentation by N Hazarika at workshop and consultation on *High value ecosystems in plantation landscapes of India* at Bangalore, organised by Nature Conservation Foundation (NCF), Mysore, and NCBS.
- Presentation by N Hazarika at capacity building programme for Forest Rangers, Ranger's College Jalukbari, Assam
- A Zimmermann and N Hazarika's interactions with an independent filmmaker, a senior journalist from Associated Press, and a writer/journalist from USA.
- Presentation by N Hazarika to undergraduate students of University of Puget Sound, Washington, USA, organised by Dr Rachel Motts (March 2011)
- Presentation by A. Zimmermann to Zoos and Aquariums Committing to Conservation (ZACC) conference in Seattle, USA (March 2011)

9. Project Expenditure

Table 3 project expenditure during the reporting period (1 April 2010 – 31 March 2011)

Item	Budget	Expenditure	Variance/ Comments
Staff costs specified by individual			
Overhead costs			
Travel and subsistence			
Operating costs			
Capital items/equipment (specify)			
Others: Consultancy			
Others (please specify)			
TOTAL			

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for LTS and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2010-2011

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	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 			
<p>Purpose To mitigate human-elephant conflict across Assam, allowing communities to pursue sustainable livelihood schemes and support activities for elephant and habitat conservation.</p>	<p>Project villages report significant reduction in of damage; no elephants harmed. Diversification of income sources in participating villages leads reduced dependency on crops Education materials used by teachers/students Reduction in the dependency on firewood Patterns and hotspots of HEC examined</p>	<p>Very good progress towards the purpose and the indicators, as described for each of the activities in the rows below.</p>	
<p>Output 1. Reduced levels of human-elephant conflict lead to fewer (human and elephant) injuries, deaths and loss of income and property.</p>	<p>12 (8 new) villages in 6 'HEC regions' gain capacity to protect from elephants Neighbouring villages copy and adopt methods observed in focal project villages (avg 5 villages per region). Average 50% reduction of crop/property loss in these villages by project end. No people and no elephants injured or killed in project villages</p>		
<p>Activity 1.1 Implementation of crop protection methods in 8 new project villages</p>		<p>Both Sonitpur and Goalpara have reported no loss or negligible loss of crops or property and no injuries or loss of life between October 2010 and March 2011. The combined use of different interventions has resulted in almost 100% saving of agriculture in Nichinta village in Goalpara and some project villages in Sonitpur. For the new villages it is too soon to report reduced HEC, as the main crop raiding season (Oct-Jan) was at the very beginning of this project.</p>	
<p>Activity 1.2, Hands-on training and workshops to be held in the project villages</p>		<p>Training/demo session on chilli deterrents conducted in 6 villages, partner NGO, and one Forest Department Beat Office. A total of 130 participated comprising farmers, village elders, field monitors, and forest guards.</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
<p>Output 2. Uptake of sustainable livelihood schemes by communities threatened by elephants offsets risks of elephant damage and improves quality of life.</p>	<p>20 villages participate in schemes for additional livelihoods 50% of participating households increase incomes above poverty line Livelihoods schemes established and set to continue beyond the project</p>		
<p>Activity 2.1. Development of supplementary livelihood ideas and business planning</p>		<p>We helped to register the cooperative-run jam and sauces production unit as a registered small enterprise called <i>Tripti Food Products</i>. We have withdrawn from this as it is now beginning to make profits. A follow-up workshop on cash crop cultivation brought together 56 farmers from 8 different villages. Seven SHGs in two new villages are engaged in raising commercial bamboo and rubber plantations, cultivation of mustard and turmeric for sale, and woven cloth products. Two SHGs have received government loans for micro-enterprise development. In Goalpara, a SHG motivation camp and 1 day training on pig farming was attended by 43 participants from 9 SHGs representing 7 villages. Following the training, 12 SHG members from 5 villages are raising pigs successfully.</p>	
<p>Activity 2.2. Training for production of products</p>		<p>Two project staff underwent training in manufacture of disposable dishes from betel nut leaf. Three team members went on an exposure trip to partner <i>Nature's Foster's</i> project village to learn about their poultry based livelihood initiative.</p>	
<p>Activity 2.3 Marketing and sales</p>		<p>7 existing SHGs in 2 new project villages are engaged in marketing and sale of their hand woven cloth products as well as sale of spices and horticulture produce.</p>	
<p>Output 3. Education materials and events help villagers, teachers and children become more aware of conservation issues and options for co-existing with elephants.</p>	<p>30 education events across the 6 regions by end of project Re-print of HEC handbook and distribution of 500 more copies Production and distribution of further education materials</p>		
<p>3.1. Disseminate further copies of 'living with elephants' handbook</p>		<p>Around 100 copies of the handbook distributed. The recipients include affected farmers in non-project villages, educational institutions, youth clubs, Forest Dep't officials, visiting NGO members, tea garden managers, researchers and media.</p>	
<p>3.2. Produce and distribute further educational materials</p>		<p>Three posters produced. The design of educational materials such as exhibition panels, and intervention <i>InfoCards</i> is underway.</p>	
<p>3.3. Workshops and training activities held with teachers and students</p>		<p>Six public HEC-awareness meetings were held, attended by over 200 villagers. Informal discussions and demos in 7 villages on elephant behaviour, HEC and interventions undertaken. Four awareness events for primary and middle schools were conducted, wherein 105 (7-14 years) students participated.</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
Output 4. Integrated approaches for habitat protection and sustainable fuel sources trialled and demonstrated in model villages	3 selected villages participate in model village competition, involving: Planting of native seedlings for local habitat reforestation Establishment of firewood plantations Trials of cooking stoves which use 50% less wood, or no wood at all Competition winner receives developmental aid at end of project All BPL (Below Poverty Line) households (average 30% of villages) use improved fuel stoves by end project		
4.1. Background research and demarcation of potential replanting areas		Activity scheduled for next project year. Consultations with partners have begun.	
4.2. Establish nursery and plant out (both for reforestation and firewood)		Shortlisting of target villages for reforestation	
4.3. Trials of alternative stoves, distribution and demonstrations		Linked up with Department of Energy Studies, Tezpur University for technical assistance and lab support for development (design to fabrication) of improved cookstoves and water heating devices. These will be field tested in project villages	
Output 5. A state-wide survey of human-elephant conflict hotspots provides data for long-term conservation planning.	GIS data and socio-economic surveys gathered and processed for rapid state-wide survey of HEC patterns Detailed monitoring and evaluation studies for Outputs 1-4 provide measurable results of this project's work		
5.1. Assam-wide HEC survey		The methodology, protocol, data collection sheets have been developed, and survey is underway. Out of 27 districts, survey completed in 12 districts, partially completed in 5, and pending in remaining 10. Preliminary mapping is in progress.	
5.2. Evaluation of effects of interventions and self-help capacity of villagers		Both Sonitpur and Goalpara have reported no loss or negligible loss of crops, property and lives/injury. The combined use of different interventions has resulted in almost 100% saving of agriculture produce in old project villages.	
5.3. Evaluation of livelihood schemes		Seven SHGs acquired new skills and honed their existing ones in weaving, handicrafts, food preservation, betel nut plate making, piggery, agriculture, and sewing. The project is encouraging sustainable cultivation of cash crops (ginger, vegetables, rubber, etc.) and small timber (bamboo).	
5.4. Evaluation of knowledge and attitudes as a result of education tools and events		Design of evaluation tools in progress.	
5.5. Evaluation of model reforestation, firewood plantation and fuel stove trials		Laboratory trial of cookstove and water heating device undertaken.	

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity, the Convention on Trade in Endangered Species, and the Convention on the Conservation of Migratory Species, as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: Asian elephants in Assam are protected from the threats of human-elephant conflict (HEC), and people living near elephant habitat are safe and able to engage in sustainable livelihoods and conservation activities in line with the CBD.	Project outcomes and evaluations show reduction in HEC and improved prospects for elephant conservation across Assam, as well as improved livelihood security for local communities, with model community reforestation projects established.	Monitoring data and evaluation studies from each of the Outputs: spatio-temporal monitoring of HEC incidences, measurement of livelihood activities and income generation, evaluation of education efforts, feasibility outcome of pilot re-forestation model villages.	
Purpose To mitigate human-elephant conflict across Assam, allowing communities to pursue sustainable livelihood schemes and support activities for elephant and habitat conservation.	Project villages report significant reduction in of damage; no elephants harmed. Diversification of income sources in participating villages leads reduced dependency on crops Education materials used by teachers/students Reduction in the dependency on firewood Patterns and hotspots of HEC examined	Detailed records of protection methods and monitoring of elephant damage. Participatory questionnaires for households on livelihood strategies. Reports on workshops and follow-up surveys and meetings held. Transect surveys of forest areas and re-forested plots, household surveys. Data from Assam-wide HEC study	
Outputs 1. Reduced levels of human-elephant conflict lead to fewer (human and elephant) injuries, deaths and loss of income and property.	12 (8 new) villages in 6 'HEC regions' gain capacity to protect from elephants Neighbouring villages copy and adopt methods observed in focal project villages (avg 5 villages per region). Average 50% reduction of crop/property loss in these villages by project end. No people and no elephants injured or killed in project villages	HEC monitoring protocols provide spatial and temporal data on all HEC events in project villages Surveys with villagers to assess capacity and attitudes before and after outreach	Communities willing to learn and apply crop protection methods using materials provided and methods demonstrated. Crop protection techniques implemented correctly as demonstrated.
2. Uptake of sustainable livelihood schemes by communities threatened by elephants offsets risks of elephant damage and improves quality of life.	20 villages participate in schemes for additional livelihoods 50% of participating households increase incomes above poverty line Livelihoods schemes established and set to continue beyond the project	Assessment of income generated (whether profitable/sustainable) Quantity and quality of products brought to markets Survey data on household income sources	Communities are willing able and free to try out new livelihood schemes Products produced are marketable and will sell in local shops/markets
3. Education materials and events help villagers, teachers and children become more aware of conservation issues and options for co-existing with elephants.	30 education events across the 6 regions by end of project Re-print of HEC handbook and distribution of 500 more copies Production and distribution of further	Extent to which handbook is used across project regions Reports and data on evaluation of education methods and events	Handbook found to be effective in evaluation study in original project (in prep)

	education materials		
4. Integrated approaches for habitat protection and sustainable fuel sources trialed and demonstrated in model villages.	3 selected villages participate in model village competition, involving: Planting of native seedlings for local habitat reforestation Establishment of firewood plantations Trials of cooking stoves which use 50% less wood, or no wood at all Competition winner receives developmental aid at end of project All BPL (Below Poverty Line) households (average 30% of villages) use improved fuel stoves by end of project	Number of seedlings raised and planted (for both reforestation and firewood plantations) Data from socio-economic surveys on poverty levels and response to alternative stoves trialed.	Villagers able and willing to participate in the activities of this Output, and agree to abide by condition of the competition (= not to harm any elephants for the duration of the project)
4. A state-wide survey of human-elephant conflict hotspots provides data for long-term conservation planning.	GIS data and socio-economic surveys gathered and processed for rapid state-wide survey of HEC patterns Detailed monitoring and evaluation studies for Outputs 1-4 provide measurable results of this project's work	Data and survey reports, academic papers, presentations at conferences, popular media reports. Data made available for strategic and management planning.	Staff and/or students are available to collect data for the survey.
<p>Activities</p> <p>1.1. Implementation of crop protection methods in 8 new project villages</p> <p>1.2. Hands-on training and workshops to be held in the project villages</p> <p>2.1. Development of supplementary livelihood ideas and business planning</p> <p>2.2. Training for production of products</p> <p>2.3. Marketing and sales</p> <p>3.1. Disseminate further copies of 'living with elephants' handbook</p> <p>3.2. Produce and distribute further educational materials</p> <p>3.3. Workshops and training activities held with teachers and students</p> <p>4.1. Background research and demarcation of potential replanting areas</p> <p>4.2. Establish nursery and plant out (both for reforestation and firewood)</p> <p>4.3. Trials of alternative stoves, distribution and demonstrations</p> <p>5.1. Assam-wide HEC survey</p> <p>5.2. Evaluation of effects of interventions and self-help capacity of villagers</p> <p>5.3. Evaluation of livelihood schemes</p> <p>5.4. Evaluation of knowledge and attitudes as a result of education tools and events</p> <p>5.5. Evaluation of model reforestation, firewood plantation and fuel stove trials</p>			
<p>Monitoring activities:</p> <p>Indicator 1. Recording of HEC using standardised protocol methods developed in the previous main project</p> <p>Indicator 2. Participatory household surveys assessing livelihood strategies and dependency</p> <p>Indicator 3. Evaluation forms and focus groups held for workshop participants</p> <p>Indicator 4. Forest transects to monitor growth of re-forested areas; household surveys of firewood and efficient stove use</p> <p>Indicator 5. Compilation and analysis of survey data on HEC across all of Assam. Systematic evaluation studies of outputs 1-4</p>			

Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	Yes
Is your report more than 5MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	No
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	