

Darwin Initiative: Half Year Report

(due 31 October 2007)

Project Ref. No.	15/040
Project Title	Building Capacity to Alleviate Human-Elephant Conflict in North Kenya
Country(ies)	Kenya
UK Organisation	University of Cambridge
Collaborator(s)	Kenya Wildlife Service (KWS), Save the Elephants (STE), Laikipia Wildlife Forum (LWF),
Project Leader	<i>Professor Bill Adams</i>
Report date	<i>07 October 2007</i>
Report No. (HYR 1/2/3/4)	1
Project website	www.laikipiaelephantproject.org

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

Logframe: In accordance with the recommendations of the Darwin Initiative Workshop on 10 June 2007, we have re-organised our project Logframe to provide a clearer link between Activities and Outputs. This re-organised Logframe is attached. This Logframe is updated, but does not revise Objectives or Activities. The Assumptions column has been updated in accordance with the last Annual Report

GSM/GPS collar-based early warning system: Seven GPS/GSM collars have been deployed on crop-raiding elephants. The early warning system is being evaluated. Visualisation software and data downloading software have been provided by STE and working well. The text message early warning system has been activated on two collars. A report is currently being compiled on the performance of this text message system and associated collaring programme, to be submitted to the UK and Kenyan project advisory committees before December.

Remote Sensing/Local Knowledge Based Early Warning System: As discussed in our last Annual Report, and as reported to the Darwin Secretariat 10 July 2007, we have assessed the Remote Sensing Early Warning System and decided it is not effective. We are testing instead a local knowledge based early warning system. GIS baseline layers have been collated for the new system but still need to be cleaned. Key informants have been identified for mapping exercises to take place in the next sixth months if the West Laikipia Fence (see below) does not demand further consideration of the utility of GIS/map-based early warning in the Laikipia context.

Community-based Human Elephant Conflict Management: Farm-based elephant deterrence methods have been introduced on 30 trial farms in two sites (Rumuruti and Pesi). These have been provided with materials and training. These farms and 30 control farms are now being systematically monitored to assess performance of deterrents using a standard data form.

Dissemination of Farm-Based Elephant Deterrence Approaches: The drama group has presented the project's educational plays with four community groups. An essay competition launched among 35 schools in HEC hotspots and 3 winning essays have been identified.

Elephant Defence Livelihoods: Chilli plants have been transferred from nurseries (27) to fields and further nurseries have been planted. Collaboration has been secured with Kenya Horticultural Development Program (KHDP), funded by USAID, to support training of the participating farmers. Thirty beehives have been established with 3 community groups, and 10 have been colonised since we provided training on beekeeping. Honeycare Africa has agreed to help market honey from these communities. The partner organisation (Symbiosis Trust) has found a market for 1000 sheets of elephant dung paper created by community group.

Training: three members of the project team have completed two ESRI online GIS courses. Two formal courses have been run by the project for partner organisations (“getting to know elephants” and “asking questions”). Trainees came from Kenya Wildlife Service, Laikipia Wildlife Forum and local wildlife conservancies.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

The West Laikipia Fence: The Laikipia Wildlife Forum (LWF) has secured US \$4m funding from the Dutch government to construct a 150km electrified elephant fence in west Laikipia. Construction of the fence will begin in October 2007 and is expected to finish in late 2008. This development was flagged in our 2007 Annual Report, but the timetable of the proposed development and its speed were not anticipated. The majority of higher-potential smallholder land will be inside the fence, but areas of more scattered farming (on drier land) will be outside, as will communal pastoral and ranch land. If effective this fence will reduce crop raiding in most if not all of the HEC hot spots targeted by this project. However, a great deal of work will be needed with local communities and large property managers if the fence is to be aligned, constructed and managed effectively. Rapid construction may make success harder to achieve.

The creation of the fence will change the nature of HEC management in Laikipia, from the defence of smallholder farms to the maintenance of fence lines and enforcement of the boundaries separating elephant tolerant from elephant intolerant land. This has various implications for the project.

- 1) The GSM/GPS collar based early warning system is likely still to have a role to play in west Laikipia over the life of the project, since fence-breaking is likely to be a key issue.
- 2) Alternative early warning systems may no longer be relevant or practical to implement and will certainly be difficult to evaluate given the confounding influence of the fence.
- 3) The project’s work on farm-based deterrents could become less relevant to local partners and those communities behind the fence (where work is currently concentrated). This might require a shift of location for this work.
- 4) Community education work is likely to remain extremely important, as communities learn to live with the fence and its maintenance.
- 5) The promotion of elephant compatible livelihoods may be less relevant in the project’s current target areas. This might require a shift of location for this work.

If built as currently planned, the impact of the fence in west Laikipia means that the project is likely to have to adapt to achieve its goals. This could involve the following changes: 1) The local knowledge based early warning system could be abandoned to reallocate resources and effort elsewhere; 2) Farm-based deterrents could shift to areas that are unlikely to be affected by the fence; 3) A new project module might be developed to support the introduction and management of the fence. This could include several activities such as: reviewing the

performance of existing fences, facilitating the involvement of local farmers and other relevant stakeholders in long term fence maintenance and management, provide training for identifying and managing fence breaking elephants, monitoring fence performance, assessing the impact of the fence on crop-raiding, elephant movement and local perceptions.

Collaboration with Save the Elephants (STE): A number of discussions have taken place between STE and the project team over the joint GPS collaring programme. The main sources of discussion are: 1) Ethical management of 'dead collars', those are collars that have been deployed on elephants but which are no longer working; 2) Availability and use of GPS collaring data; and; 3) Management of the 'e-fence' system (especially detailed changes to programming of collars). These have caused some strain in relationships, although these have not compromised the joint programme to date. The technical and practical feasibility of the e-fence system and the current collaboration with STE is being assessed, and a report will be prepared by the end of December 2007. This will recommend changes to current arrangements if necessary. These might include; 1) Handing over total responsibility for the development and evaluation of the E-fence system to STE; 2) Securing additional funding to procure non-STE GPS/GSM collars to run the e-fence trial independently.

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

Not yet. We anticipate discussing these before the end of 2007, when the actual timetable of fence construction is clearer.

Discussed with the DI Secretariat: Yes in Oct 2007 (month/yr)

Changes to the project schedule/workplan: NO

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form email** to Eilidh Young, Darwin Initiative M&E Programme at Darwin-Projects@ectf-ed.org.uk . The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**

Appendix 1
Reorganised Logframe for 15/040

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>Alleviate human-elephant conflict and promote tolerance of elephants in Laikipia District, Kenya</p>	-Reduction in the total number and severity of elephant crop-raids in Laikipia by year three	-HEC database, field reports, published papers	-Sustained support from the Kenya Wildlife Service, the Laikipia Wildlife Forum and landowners in Laikipia District.
	-Permanent community based HEC management and research project established; HEC management training provided at the local, national and international levels.	-Maps, booklets, posters; training manual; conservation and management plan; elephant fencing impact assessment; workshop assessments/ reports; meeting minutes; newsletters; published papers; popular articles	-Regional expertise in HEC alleviation remains limited
	- Sustainable revenue streams secured to maintain project activities beyond Darwin funding	- Laikipia wildlife magazine website; Successful grant applications by trained project assistants	-Content of the web magazine is sufficiently interesting and marketable to attract paying subscribers -Funding bodies continue to value project activities
	-Income generated by local communities through sustainable elephant defence livelihoods	-Financial statements by partner organisations; project reports	-A market exists for products developed through sustainable elephant defence livelihood programme.
<p>Outputs</p> <p>O.1. GPS/GSM collar based HEC early warning system</p>	-15 elephants collared by yr 2; collar-mobile phone text message system working by yr 2	-journal paper x 1 -text messages sent -progress reports	-GPS/GSM collars function properly -Partner organisation remains committed and able to support collaring operation
<p>O.2. Local Knowledge based HEC Early Warning System (formerly Remote sensing (NDVI) HEC early warning system)</p>	-Prediction maps distributed to designated project assistants and partners by yr 2	- 'Early warning maps'; progress reports; meeting minutes; 1 x journal paper	-Knowledge of local partners sufficiently detailed. -West Laikipia Elephant Fence (being constructed from Autumn 2007) does not make this approach to early warning

			irrelevant or unworkable.
O.3. Community based HEC management and research programme established	-5 demonstration sites set up in yr 1; Local HEC alleviation team trained by yr 3; HEC database compiled and alleviation tools assessed by yr 3	-Field day reports; training assessments; GIS course certificates; workshop notes; elephant conservation and management plan x 1; journal papers x 3	-Local farmers willing and committed to participate in grassroots elephant management project; - Partner organisations committed to providing GIS support and software - Construction of West Laikipia Elephant Fence from Autumn 2007 does not make this work irrelevant in Laikipia
O.4. Dissemination of Farm-based Elephant deterrence approaches among vulnerable communities and conservation practitioners	-Booklets, play performances, newsletters and posters disseminated each yr; East African training workshop; ongoing 'outreach' support provided to vulnerable farmers	-Copies of printed material sent to Darwin; training manual x 1; attendance reports and training assessments	-Partner organisations (the Laikipia Wildlife Forum) is committed to local dissemination of training and education materials -East African conservationists and wildlife managers value content of proposed training workshop - Construction of West Laikipia Elephant Fence from Autumn 2007) does not make this work irrelevant in Laikipia
O.5. Elephant defence livelihood systems established	-3 community groups trained to produce dung paper, honey and hot chillies by yr 3; Markets established for sustainable products by yr 2.	Purchase and sales reports by partner organisations	-Economic incentives are sufficient for local producers and partner organisations to develop and sustain production -Construction of West Laikipia Elephant Fence from Autumn 2007) does not make this work irrelevant in Laikipia
O.6. Sustainable revenue streams established for a permanent HEC management training team in Laikipia	-Web-based Laikipia wildlife magazine subscription service set up by yr 3; Fundraising and proposal writing training for project assistants by yr 3.	Website published by partner organisation; financial reports by partner organisation	-Sufficient funds are raised and allocated by partner organisation for website construction and programming -Web magazine sufficiently attractive to subscribers to generate revenue.
Activities	Activity milestones (summary of project implementation timetable)		Assumptions

<p>0.1.1 e-fence trial under ranch management</p>	<p>O1.1.a Agreement with ranch and elephant collar partner (Save the Elephants, STE)</p> <p>O1.1.b Crop raiding elephants found and collared</p> <p>O1.1.c. efence software developed programming completed by collaring partner STE)</p> <p>O1.1.cd Elephant warning messages received by ranch</p> <p>O1.1.e Ranch fence team respond to warnings and report success</p> <p>O.1.1.f Analysis report published</p>	<p>O1.1.a Parties agree to commit resources</p> <p>O.1.1.b. Logistics, support and permissions obtained.</p> <p>O1.1.c Efence software developed successfully</p> <p>O1.1.d Warning timely and GPS accurate</p> <p>O1.1.e Ranch fence team able and willing to respond; monitoring completed</p> <p>O.1.1.f Staff resources sufficient to complete analysis</p>
<p>0.1.2 e-fence trial under community management</p>	<p>O2.1.a Efence technology successful</p> <p>O.2.1.b. Crop raiding elephants found and collared</p> <p>O2.1.c Community group agrees to participate by forming community fence team</p> <p>O.2.1.d community fence team receives warning, responds and reports progress</p> <p>O2.1.e push-to-talk technology trialled with community fence team</p> <p>O.2.1.f Analysis report published</p>	<p>O2.1.a Efence software developed by STE (NB this activity follows O.1.1)</p> <p>O.1.1.b. Logistics, support and permissions obtained.</p> <p>O2.1.c Suitable community group exists, is created by others (e.g. as part of Laikipia West Elephant Fence) or can be strengthened by this project to assist with trial; staff resources sufficient to achieve this</p> <p>O2.1.d process of building Laikipia West Elephant Fence does not disrupt trial; monitoring completed</p> <p>O.2.2.e technology and handsets made available by partner organisation GSMA</p> <p>O.2.1.f Staff resources sufficient to complete analysis</p>
<p>0.2.1 Local Knowledge based HEC Early Warning System</p>	<p>O.2.1.a. identify crop-raiding risk zones in Laikipia</p> <p>O.2.1.b. identify local expert informant panel in each zone and carry out conflict and crop scoring exercise</p> <p>O.2.1.c Collate data into a single GIS.</p> <p>O.2.1.d Generate and circulate predictive maps of human-elephant conflict</p> <p>O.2.1.e Evaluate predicted crop-raiding against actual crop-raiding and effectiveness of system</p>	<p>O.2.1.a. Data available and sufficient (from scout monitoring programme ongoing since 2004); GIS capacity sufficient to deliver timely maps.</p> <p>O.2.2.b. Local experts have necessary knowledge and willing to join panel and participate in exercise.</p> <p>O.2.1.c. GIS capacity sufficient</p> <p>O.2.1.d. Data flow timely and GIS capacity sufficient</p> <p>O.2.1.e. Monitoring completed; analytical capacity sufficient</p>

<p>O.3. Farm-based elephant deterrence and research programme established</p>	<p>O.3.1.a Identify trial sites</p> <p>O.3.1.b Select 100 trial farms and 100 control farms</p> <p>O.3.1.c Carry out baseline surveys for all 200 farms</p> <p>O.3.1.d Design data capture forms for measuring performance of deterrents on trial and non-trial farms</p> <p>O.3.1.e Evaluate performance of farm-based elephant deterrents</p>	<p>O.3.1.a Laikipia West Fence doesn't render trial sites irrelevant</p> <p>O.3.1.b Farmers are willing to participate with the project</p> <p>O.3.1.c Capacity sufficient to design survey/monitoring forms and carry out surveys</p> <p>O.3.1.d/e Sufficient data collected; analytical capacity sufficient</p>
<p>O.4 Dissemination of farm based elephant deterrence among vulnerable communities and conservation practitioners</p>	<p>O.4.1.a Develop a detailed training plan for project staff and partner organisations</p> <p>O.4.1.b Carry out informal and formal training elements of the training plan</p> <p>O.4.1.c Organise an East African Training Workshop on HEC Management</p> <p>O.4.1.d Generate and publish papers x 3</p> <p>O.4.1.e Establish a community education programme (drama, posters, booklets, competitions) to improve local knowledge of HEC, crop-defence, elephant conservation and elephant management.</p> <p>O.4.1.f Evaluate the impact of the education programme</p>	<p>O.4.1.a Training materials and opportunities are valued by targeted groups</p> <p>O.4.1.b Personnel are available from partner organisations; Resources are sufficient to carry out training exercises</p> <p>O.4.1.c Sufficient interest exists among East African wildlife institutions to attract workshop participants</p> <p>O.4.1.d The data collected is of sufficient quality to publish, capacity is available for data analysis and write up</p> <p>O.4.1.e Resources and capacity is sufficient to create an education programme with enough geographical coverage to improve awareness in all major HEC hotspots in Laikipia.</p> <p>O.4.1.f There are sufficient resources to collect, analyse and write up data on the impact of the education programme activities.</p>

<p>O.5 Elephant defence livelihood systems established</p>	<p>O.5.1.a Identify partner organisations that can provide support for livelihood activities.</p> <p>O.5.1.b Establish markets for 'elephant compatible' products (chillies, dung paper and honey)</p> <p>O.5.1.c Identify community groups to train on the production of honey, chillies and dun paper</p> <p>O.5.1.d Train communities on the production of 'elephant compatible' products</p> <p>O.5.1.e Link community products with markets</p> <p>O.5.1.f Evaluate the impact of livelihood activities</p>	<p>O.5.1.a Partner organisations have sufficient resources and capacity to support livelihood activities</p> <p>O.5.1.b Market exists; sufficient resources are available to market products</p> <p>O.5.1.c Suitable community groups exist and/or can be organised</p> <p>O.5.1.d Capacity exists or is available to train communities on production of honey, chillies and dung paper</p> <p>O.5.1.e Revenue generated by partner organisations is sufficient for continued support of product supply chain to be financially viable</p>
<p>O.6 Sustainable revenue streams established for permanent HEC management team in Laikipia</p>	<p>O.6.1.a Create a project brand, website, web magazine and fundraising interface</p> <p>O.6.1.b Establish legacy institution for the project</p> <p>O.6.1.c Train project staff on grant proposal writing</p> <p>O.6.1.d Apply for legacy funding</p>	<p>O.6.1.a Resources are sufficient to create the websites and regularly update the web magazine</p> <p>O.6.1.b An existing institution is willing to take on the project and/or there are sufficient resources to create a new institution</p> <p>O.6.1.c Project staff have sufficient capacity to write proposals independently</p> <p>O.6.1.d Donors are available and are willing to support the project</p>

Appendix 2

Response to Reviewer's Queries over First Year Report

Has the MoU with Save the Elephants been signed and has STE delivered on their commitments? This would appear to be critical for this aspect of the project and would help to clarify how work and responsibilities are divided amongst partners, and which can really be claimed by this Darwin project.

Yes the MoU with Save the Elephants has been signed and STE have delivered on their commitments. Collars have been deployed, data downloading tools have been provided and the text message alarm system has been activated on two collars and is currently being monitored by the Darwin project team in Nanyuki. Currently the University of Cambridge has decided to limit the number of GPS collars deployed on elephants within the partnership to the five funded by the Darwin project on the basis that this will be sufficient to trial the E-fence system. Further collars may be deployed within the partnership if the system works effectively.

STE have deployed three additional collars on elephants within the ecosystem, including two potential fence breaking/crop-raiding elephants and plan to replace collars on other elephants within Laikipia. Cambridge University will have access to all these data.

It is not always clear whether this project can really claim credit for all the outputs and initiatives, or whether project partners are actually providing the lead. In future reports it would be helpful if the division of responsibilities and credit was clarified in activity and output reporting, so that it is possible to assess whether this Darwin project really has its own identity amongst the myriad of stakeholders and partners in the area. If this is not the case, the project should consider how this unique identity can be achieved, particularly since the more hi-tech, academic aspects of the project may not (perhaps unsurprisingly) after all be feasible or sustainable in the long term.

With the exception of the GPS/GSM collar 'E-fence system' which is being carried out in partnership with STE, and the production of elephant dung paper which is being led by the Symbiosis Trust with input from Cambridge University, the Darwin initiative is taking the lead on all project activities and will continue to do so until handing over to legacy organisations takes place within the final year of the project.

In future reports, the role of Cambridge University and partner organisations will be made more explicit in relation to each project activity. The local website (www.laikipiaelephantproject.org) and the use of the Darwin logo have made the project very visible to local stakeholders.