



DARWIN200

17-008

Submit by Monday 1 December 2008

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 16: STAGE 2

Please read the Guidance Notes before completing this form. Where no word limits are given, the size of the box is a guide to the amount of information required. Information to be extracted to the database is highlighted blue.

1. Name and address of organisation (NB: Notification of results will be by post)

Name: Professor N Leader-Williams	Address: Durrell Institute of Conservation and Ecology (DICE), Department of Anthropology, Marlowe Building, University of Kent, Canterbury, Kent CT2 7NR
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2. Project title (not exceeding 10 words)

Can hunting and conservation of endemic Annamite ungulates be reconciled?

3. Project dates, duration and total Darwin Initiative Grant requested

Proposed start date: 1 st April 2009		Duration of project: 3 years		End date: 31 st March 2012	
Darwin funding requested	2009/10 £ 100,576	2010/11 £ 122,449	2011/2012 £ 70,444	2012/13 £	Total £ 294,469

4. Define the purpose of the project (extracted from logframe)

More effective conservation of a globally important ecosystem by i) conducting applied conservation research on the highly endemic Annamite ungulate community and on threats posed by hunting; ii) strengthening the capacity of leading universities within the region to produce well-trained graduates in biodiversity conservation who value traditional knowledge and iii) influencing on-the-ground community and government forest management systems.

5. Principals in project. Please provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more than one overseas project partner.

Details	Project Leader	Other UK personnel (working more than 50% of their time on project)	Main project partner and co-ordinator in host country/ies
Surname	Leader-Williams	Wilkinson	Thin
Forename (s)	Nigel	Nicholas Michael	Van Ngoc
Post held	Professor	Project Officer	WWF Project Manager
Institution (if different to above)			WWF Greater Mekong
Department	DICE	DICE	Vietnam programme
Telephone			
Email			

- **Has your organisation received funding under the Darwin Initiative before? If so, give details.**

Reference No	Project Leader	Title
5174	Dr Richard Griffiths	Chameleons, Conservation and Local Communities in Madagascar
6131	Professor Nigel Leader-Williams	Wildlife and People: Conflict and Conservation In Masai Mara Kenya
10003	Professor Nigel Leader-Williams	Community-driven conservation and ecotourism in the Mara ecosystem, Kenya
11005	Professor Nigel Leader-Williams	Black Rhino conservation and ecotourism impacts in North Western Namibia
11018	Dr Richard Griffiths	Aztecs and Axolotls: Integrating conservation and tourism at Xochimilco, Mexico
12006	Professor Nigel Leader-Williams	Transnational conservation planning in the Maputaland ecoregion of Southern Africa
13019	Professor Nigel Leader-Williams	The Greater Masai Mara Community Scout Programme
15009	Dr Jim Groombridge	Investing in Island Biodiversity: Restoring the Seychelles Paradise Flycatcher
15029	Dr Richard Bodmer	Certifying Peccary Pelts in Peru: Catalysing Community-based Wildlife Management

7. IF YOU ANSWERED 'NO' TO QUESTION 6 describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)

Aims (50 words)

Activities (50 words)

Achievements (50 words)

8. Please list the UK/collaborative (where there are partners in addition to the applicant organisation) and host country partners that will be involved, and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of host country partners to be involved in the project. Please provide written evidence of partnerships. Please copy/delete boxes for more or fewer partnerships.

<p>Partner Name: WWF Greater Mekong</p>	<p>Details (including roles and responsibilities and capacity to engage with the project):</p> <p>WWF was the first international conservation NGO to work in Vietnam and is the only NGO with a strong presence in both Vietnam and Lao. The Greater Annamites are one of WWF's Global 200 priority ecoregions and the endemic ungulates (especially the flagship Saola) and the areas where they occur are globally accepted conservation priorities within the Annamites.</p> <p>WWF works in the region through close collaboration with government counterparts to produce conservation plans under the National Biodiversity Action Plans of Vietnam and Lao and to implement these at the provincial level. Since 1997 WWF has worked in the provinces of Quang Nam and Thua Thien Hue, at the centre of the Central Annamites priority landscape. WWF's field offices in these provinces are situated within those of the respective provincial Forest Protection Departments and FPD staff are responsible for implementation of jointly prepared plans, with WWF providing training and support. This close relationship makes WWF well placed to work on enforcement issues and advocate for community forest tenure and natural resource use rights.</p> <p>DICE has previously collaborated with WWF on developing the Central Annamites' conservation plan and a spatial plan for Quang Nam province.</p> <p>WWF will co-ordinate the project in Vietnam and Lao and co-ordinate with other WWF and non-WWF projects ensuring, as with previous work, that research and conservation action are part of a single, mutually reinforcing process and that all conservation actions for endemic ungulates form a comprehensive programme. WWF will work with communities to arrive at solutions for sustainable forest use and help to organise workshops and training courses. They will be responsible for ensuring support from the authorities and for maintaining project field activities beyond the end of the project.</p> <p>Through links with its global network, WWF will also continue to offer technical support, and to search for complementary funding for this project. Dr Barney Long, now Asian Species Conservation Officer in WWF US, worked in Vietnam for 8 years and will offer his support as the main international contact in the wider WWF family.</p>
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<p>Partner Name: Vinh University</p>	<p>Details (including roles and responsibilities and capacity to engage with the project):</p> <p>Vinh University is the largest university in Vietnam and one of the two main academic institutions within the project area. Vinh University is undergoing a period of intensive infrastructure and course development with funding from the World Bank and Asian Development Bank. Vinh University will collaborate with DICE to develop its own capacity to train conservation researchers. Its Faculty of Biology has recently begun to develop a strong conservation focus including through collaboration with Conservation International to teach survey methods and conservation approaches for primates. Staff and students have also been involved in surveys for endemic ungulates in the northern Annamites and in recent work to develop survey methods for Hue and Quang Nam.</p> <p>Vinh University takes Laotian as well as Vietnamese Masters students and has a working relationship with the authorities in Salavan province in Lao as well as the provinces of Nghe An and Ha Tinh in Vietnam where WWF currently lacks a strong presence but has worked in the past.</p> <p>Vinh University will also liaise with Hue University to share experience and new materials and to invite Hue staff and students to training courses held at Vinh. The Vice Dean of the Faculty of Biology, Dr Cao Tien Trung, who has a strong record in conservation research, will be the main project contact. Vinh University will propose a candidate for the DICE masters course and provide any necessary English language tuition. They will also propose candidates for involvement with project research work in Vietnam and Lao. They will be responsible for organising any training to take place on campus and will secure the approval of the Ministry of Education and other relevant authorities for such training and for permanent changes to their taught courses.</p>
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<p>Partner Name: National Forest Protection Department of Vietnam (FPD) under the Ministry of Agriculture and Rural Development (MARD)</p>	<p>Details (including roles and responsibilities and capacity to engage with the project):</p> <p>National FPD is the agency responsible for forest biodiversity conservation in Vietnam and has a sub-department in every province responsible for management planning, enforcement and monitoring of forest resources within that province.</p> <p>Both national FPDs and the provincial FPDs of Thua Thien Hue and Quang Nam provinces have a strong history of collaboration with WWF (see above) and have also all shown a particularly strong interest in conservation of the Annamite endemic ungulates. While they have core funding to address threats to the species, they require support to conduct the required research and community work to produce a comprehensive strategy for their conservation.</p> <p>National and provincial FPDs will actively participate in management planning and in guiding project research in line with long-term needs to address threats to ungulate species and unsustainable hunting. FPD staff will receive necessary training through the project and will participate in fieldwork. FPD will also help to secure permissions for project activities.</p>
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<p>Partner Name: American Museum of Natural History: Center for Biodiversity Conservation</p>	<p>Details (including roles and responsibilities and capacity to engage with the project):</p> <p>In 1997 AMNH initiated an integrated biodiversity conservation program in Vietnam to aid the government in reaching its national conservation objectives. Among the activities AMNH has carried out in-country to date are: biodiversity inventories of currently unprotected sites focusing on poorly known taxonomic groups (e.g., amphibians); species-level conservation efforts targeting Vietnam's flagship animals (e.g., Saola); the application of analyses of land cover change to conservation planning and the monitoring of protected areas; and professional development and capacity-building. Since 2004 AMNH has collaborated extensively on these activities in the Central Annamites with WWF, provincial Forest Protection Departments, and educational institutions including Hue University of Agriculture and Forestry.</p> <p>AMNH will work with WWF and other collaborators to develop spatially explicit models of Saola occurrence and distribution. These will be created using data from an on-going camera trap survey for ungulates in the study area as well as data on Saola occurrences. The latter will be used to develop models of species distribution that can be used to focus additional survey work. Additionally, AMNH will support the development of sustainable forest use by supporting efforts to map patterns of resource extraction. Finally, AMNH will conduct genetic analyses of dung and tissue samples for species identification and assessment of population genetic structures for these endemic ungulates.</p>
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9a. Have you consulted stakeholders not already mentioned above? Yes No

If yes, please give details:

Hue University will be an important participant in this project and, at a meeting at the Department of Environmental Science in September 2008 initial plans were discussed for their engagement, including the participation of masters students and young staff in project activities and the chance for candidates to be proposed for the DICE masters courses. Hue students will be involved in all research activities in Hue province.

The Wildlife Conservation Society in Lao work in Bolikhamxay and Salavan provinces, to the north of WWF's focal area. They also have a particularly strong experience in developing field survey methods and dialogue with them has already informed the approach suggested here. If they are successful in obtaining a major contract to work in Bolikhamxay, they will become an important project partner in Lao, able to greatly extend the research component into conservation action.

The Lao Biodiversity Association (a local NGO) has expressed interest in collaborating with WWF on participatory mapping in Lao.

Two Vietnamese research institutes, **the Institute of Ecology and Biological Resources (IEBR)**, and the **Center for Natural Resources and Environmental Studies (CRES)** have already supported related activities and will continue to do so through their collaboration with AMNH

Internationally the **Zoological Society of London**, the **People's Trust for Endangered Species** and the **Smithsonian Institution** have expressed interest in offering technical and financial support to camera-trap and radio-collar surveys for endemic ungulates if core funding can be obtained through this proposal.

While **local communities** and **commune and district agencies** in Thua Thien Hue and Quang Nam have not been specifically consulted about this proposal, the community work outlined here is a continuation of work that they have supported and participated in to date.

9b. Do you intend to consult other stakeholders? Yes No

If yes, please give details:

The approval of the Provincial People's Committees will be sought by FPD if funding is confirmed. Prior informed consent of local communities and individual participants will be sought at the beginning of participatory mapping, interview and resource-use planning work. Relevant district and commune agencies in both countries will be consulted regarding planned activities in their area. WWF and Lao collaborating institutions have a long experience in the area and have established a standard procedure for consultation through appropriate departments. Discussion with the management board of Bach Ma National Park is planned for before the project start date. The management boards of the proposed new protected areas will be included once they are established.

9c. Have you had any (other) contact with the government not already stated? Yes No

If yes, please give details:

WWF has consulted the local and national authorities in Vietnam and in Lao on numerous occasions. In Thua Thien Hue and Quang Nam, WWF is in constant dialogue with the provincial authorities.

9d. Is any liaison proposed with the CBD/CMS/CITES focal point in the host country? Yes No

If yes, please give details:

FPD are Vietnam's CITES Management Authority, and are among our project partners. IEBR and CRES (see 9a) are CITES scientific authorities.

The CBD focal point is the Vietnam Environmental Protection Agency of the Ministry of Natural Resources and Environment (MONRE). Although not a direct partner in the proposed project MONRE will be made aware of this project and its relevance to the national BAPs and will be invited to the inception workshop. MONRE is a new Ministry and has limited capacity at the provincial and district levels, hence, to guarantee success activities have to be carried out through FPD.

PROJECT DETAILS

10. Please provide a Concept note (Max 1,000 words) (repeat from Stage 1, with changes highlighted)

997 words including references

The northern Annamite Mountains of Vietnam and Lao are globally important for conservation¹ as the site of remarkable discoveries of three new species of endemic ungulate. The saola *Pseudoryx nghetinhensis* and the large-antlered and Annamite muntjacs *Muntiacus vuquangensis* and *M. truongsonensis* were first described for science in the 1990s². For national governments these endemics are symbols of national pride, while the forests they inhabit are key watersheds of lowland rivers. Upland peoples who depend directly on the Annamite ecosystem use its ungulates as a vital source of protein and a foundation of traditional cultures. Hunting, though ubiquitous, is illegal in Vietnam. Now, through the illegal wildlife trade, this unique community of ungulates also makes a large but unquantified contribution to rural economies.

The wildlife trade is mostly supplied by indiscriminate snaring, which local communities and conservationists widely agree is unsustainable. Indeed, two endemic ungulates, the saola and large-antlered muntjac, are threatened with extinction³. Even the sambar *Cervus unicolor* a common species elsewhere, is now close to extinction in the Annamites. However, wildlife traders and conservationists value ungulate species differently. Wild pig *Sus scrofa* is the most valuable ungulate meat, whereas the less valuable endemic and threatened species are caught incidentally as by-catch.

Developing solutions for ungulate conservation requires information on the value of hunting to local communities and the factors determining local hunting strategies. Data are also needed on the habitat requirements of ungulate species and the effects of traditional and commercial hunting on their local distribution. Surveying forest ungulates is always difficult, but the wariness of surviving animals in the Annamite communities presents a major challenge to standard ecological survey methods. The threatened endemics are particularly hard to detect, so comprehensive field data cannot be collected in the timescale needed for conservation action.

Thus, documenting indigenous knowledge could be a powerful complement to ecological surveys. Equally, such knowledge is itself threatened, particularly the memories of elders about traditional forest management practices that once allowed the endemic species to survive for millennia. We will place emphasis on participatory mapping to produce a shared understanding of local geography, and to allow researchers to uncover local perceptions about ungulate distributions. Maps, once produced, will provide the basis for discussions about past use of the forest, and for negotiating future collaborative solutions among stakeholders. Maps are also a means of preserving knowledge about the landscape and its associated

legends and histories.

The Annamite chain is cut in half by a major biogeographic division, the Hai Van pass. This project will focus on the northern area, to which many Annamite endemics, including two ungulates, are restricted. Many ethnic groups inhabit the area and follow a range of livelihood strategies. We will focus particularly on the Hue-Quang Nam landscape, home to the Katu people: swidden agriculturalists with a rich hunting tradition. This landscape is also the priority location in Vietnam for conserving saola, the flagship for two proposed new protected areas.

This project will develop research capacity among partners, including national governments of Vietnam and Lao and local Forest Protection Departments and protected area management boards that seek to control unsustainable hunting practices. The project will also link to existing efforts by WWF and local government agencies to establish community forest management systems in the Hue-Quang Nam landscape, that are linked to clear land tenure, benefit sharing mechanisms and poverty alleviation actions.

DICE builds capacity of nationals from developing countries in conservation research and practice. In this project, we will build local scientific capacity to implement applied research of high quality by:

- providing intensive training in GIS, participatory mapping and interview techniques for Vietnamese and Laotian Masters and undergraduate students and relevant FPD and university staff.
- working with Vinh University to develop existing and new courses in conservation management, resource economics and wildlife trade by providing course outlines, lesson plans, teaching aids and appropriate readings.
- providing at least 20 Vinh and Hue undergraduates the opportunity to collect data for dissertation projects on habitat, threat and environmental conditions during annual field trips across the landscape.
- providing 10 Vinh and Hue university Masters students and junior staff, both Vietnamese and Laotians, the opportunity to study community forest use and local ungulate distribution in key locations, using participatory mapping approaches developed by WWF and partners for use in the region.
- providing two Vietnamese postgraduates from collaborating institutions in Vinh and Hue the opportunity to follow MSc courses at DICE. One MSc in International Wildlife Trade and Conservation will focus on cultural and economic factors underlying hunting practices based on participant observation and interview work. The other MSc in Conservation Biology will focus on GIS modelling of ungulate and snare distribution, based on participatory mapping and on the data collected by the undergraduate survey teams, which this student will help to coordinate. Both students will work for the project for an initial period while collecting their data, before attending a 1-year MSc at DICE, and then returning to the project.

Project partners will combine data from these student projects and data from camera trapping surveys supported by AMNH into two main products:

- GIS models of probable distributions of endemic ungulates across the northern Annamites.
- a bio-economic model of the Hue-Quang Nam landscape combining hunting data with data on participatory mapping data and camera-trap occupancy collected by the DICE/WWF/AMNH project partnership. This will allow zoning of the landscape for hunting and conservation, taking into account both economic realities and traditional culture. The model will include uncertainty analyses, and become a tool for adaptive management, including targeting future research needs.

These final outputs will feed into on-the-ground conservation efforts in the Hue-Quang Nam landscape being conducted by FPD and WWF and into wider initiatives by the governments of Vietnam and Lao to expand their protected area system as pledged in their BAPs.

Key references:

1. Olson DM & Dinerstein E (1998), *Conservation Biology*, 12: 502-515.
2. Vu Van Dung et al. (1993). *Nature*, 363:443-445.
3. Timmins, RJ et al. (2007). *2007 IUCN Red List of Threatened Species*.

11a. Is this a new initiative or a development of existing work (funded through any source)?

Please give details:

WWF have been conducting conservation work on Annamite endemic ungulates in Quang Nam and Thua Thien Hue since 2005. However, WWF does not have the capacity to undertake the research needed to underpin its conservation actions. Nicholas Wilkinson has been involved in preliminary research on Annamite ungulates since 2006 with funding from a variety of sources including WWF and with the collaboration of AMNH and Vinh University. The research undertaken to date has uncovered the approximate local distribution of the species and led to the development of the survey methods proposed for use in this project. This proposal seeks to scale up the research, key to saving Annamite endemics.

More broadly, this project is substantively based on plans made by WWF and Vietnamese government agencies though a process that began in 1998 (see section 12). The project would have a strong foundation for action due to the history of collaboration between WWF and government agencies on research and policy design in Quang Nam and Thua Thien Hue provinces and also nationally.

11b. Are you aware of any other individuals/organisations/Darwin Initiative projects carrying out similar work? Yes No

If yes, please give details explaining similarities and differences, and explaining how your work will be additional to this work and what attempts have been/will be made to co-operate with and learn lessons from such work for mutual benefits:

WWF is also the host country partner for the IIED Darwin project for co-management of Forests and Wildlife in Bi Doup-Nui Ba National Park, Vietnam (ref 16014). That project will export WWF's models of community co-management into a new area. This project seeks to examine and enhance their capacity to address the problem of unsustainable hunting. WWF has been in the vanguard of community co-management work in Vietnam and has a wealth of experience to inform the development of this project.

This project will also learn from ongoing research efforts from areas of the world where the sustainability of bushmeat hunting has received more research attention. Projects by Dr Richard Bodmer (DICE) at Tamshiyacu-Tahuayo in Peru and by Dr Carlos Peres (UEA) in Brazil (Darwin project ref 16001) are two examples.

12. Please indicate which of the following biodiversity conventions your project will contribute to: -

At least one must be selected.

- Only indicate the conventions that your project is directly contributing to.

- No additional significance will be ascribed for projects that report contributions to more than one convention

Convention on Biological Diversity (CBD) Yes No

CITES Yes No

Convention on Migratory Species (CMS) Yes No

What problem is this project addressing and how was it identified? (150 words) 148 words

The bushmeat 'crisis' has attracted relatively little research attention in South-east Asia. However, a strong consensus suggests that much bushmeat hunting is unsustainable. In Vietnam, calls for research on the endemic Annamite ungulates date to their discovery in the early 1990s. However, Vietnamese institutions lack the interdisciplinary focus needed to undertake appropriate research. Furthermore, existing capacity is concentrated in Hanoi, far from provincial decision-makers. In 2005 a 30-year governmental conservation strategy (<http://assets.panda.org/downloads/thechtsbci.pdf>) reinforced the need to determine the sustainability of current hunting practises in the Vietnamese Annamites. Likewise, the National Action Plan for the Saola recognises that research is essential to conserving the species. The situation for the endemic muntjacs is similar. Given the global priority of the Annamites and their endemic ungulates, the lack of funds to carry out the necessary research has caused both surprise and local concern. This proposal seeks to directly address these concerns.

What will change as a result of this project? (150 words) 146 words

This project will break the current impasse in successfully conserving endemic Annamite ungulates, by providing a spatial picture of their status, the levels of threat they face from hunting, and their conservation needs. This information, and with promised support from government and other sources, will allow WWF and FPD to target appropriate conservation action to maintain the remaining populations. Furthermore, the two main academic institutions in the north and central Annamites will be able to conduct high-quality interdisciplinary research on conservation issues. With the capacity of local universities enhanced, Vietnam will also be able to maintain monitoring and research work for future planning. Studies into the sustainability of bushmeat hunting in South-east Asia will be advanced, through research carried out in this global priority area for conservation, and the capacity of local institutions to undertake multi-disciplinary research into this key area will have been greatly enhanced.

Why is the project important for the conservation of biodiversity? (150 words) 150 words

The Annamite Mountains are a global centre of endemism, and many species probably still remain undescribed for science. Their endemic ungulates, and especially the critically endangered Saola, are their most potent flagship, due to the surprise discovery of a new genus of large mammal during the last decade of the 20th century. Without concerted action during the next decade, the species and their flagship potential will vanish. Consequently, national conservation plans identify the crucial need for research to underpin appropriate conservation action.

More broadly, an immediate need is for research into the use of bushmeat in south-east Asia, where wildlife trade is the main threat to most species of large mammal. As elsewhere, nationwide blanket bans on hunting have proved ineffective. Therefore, developing workable solutions requires a better understanding of ecological and economic dynamics. This project will not only begin this research but also build local capacity for its continuation.

How does this relate to one or more of the biodiversity conventions? (150 words) 150 words

A detailed study of bushmeat hunting will enable management authorities in Vietnam and Lao to ensure sustainable use of Annamite ungulates (CBD Articles 2 and 10). The wider programme of *in situ* conservation is relevant to Article 8, in particular by providing guidelines for management of new protected areas (8b), for maintaining viable populations of species (the endemic ungulates) (8d), which are appreciated nationally and internationally as important biological resources (8c). Building the capacity of Vietnamese universities for biodiversity research is relevant to Articles 12 and 18.

In addition, the project will:

- produce monitoring methods for species (7b) and threats (7c) and a protocol for data recording and analysis (7d) for the endemic ungulates;
- produce repositories, in the form of participatory maps, for threatened traditional knowledge (8j) in over 100 villages; and
- give Vietnamese conservation planners access to technology (computer models) relevant to their work (Article 17).

13. How will the results of the project be disseminated; how will the project be advertised as a Darwin project and in what ways will the Darwin name and logo be used? (Max 200 words) 159 words

The Darwin name and logo will be used on all project reports and publications and on the WWF and DICE websites. The Darwin name and logo will also be displayed at all presentations given to policy-makers and scientists in Vietnam, Lao or internationally, including on a proposed presentation at the 2009 Society for Conservation Biology Meeting in Beijing. All course materials developed during the project will bear the logo and an explanation of the Darwin Initiative's goal of employing British expertise and donor assistance for the conservation of biological diversity in developing countries. The Darwin Initiative will be acknowledged at all training events and meetings. The potential of research on the enigmatic flagship species of the Annamites, and especially of the Saola, to attract local media attention in Vietnam and Lao is considerable: the Darwin Initiative will also be acknowledged as a core donor in any popular articles, television or radio programmes or public events related to this project.

14. What will be the long term benefits of the project in the host country or region and have you identified any potential problems to achieving these benefits? (Max 200 words) 199 words

The long term benefits will be threefold:

1) Developing the relevant research capacity of the two major universities in the northern Annamites will enhance Vietnam's capacity to sustainably manage natural resources and conserve biodiversity in this globally significant region. Training FPD and protected area staff in monitoring, survey and analysis will increase their management capacity. The process of co-operation between national and international research and conservation organisations will provide models for similar situations.

2) Evaluating the potential for sustainable hunting in the Hue – Quang Nam landscape will allow provincial decision-makers to plan conservation. The successful and respected community co-management projects in these provinces, and WWF's potential to leverage additional funds, will give them a solid basis to do so. This project will begin by negotiating hunting issues with the local communities. Participatory maps of biodiversity and resource use will assist conservation planning further north in the Annamites. In Lao, WWF and WCS have the capacity for effective conservation of endemic ungulates if provided high-quality distribution data.

3) The project is essential to conserve the endemic ungulates which are symbols of pride in, and hope for, the natural heritage of the biodiverse and economically and culturally important Annamite ecosystem.

15. State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how

relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave? (Max 200 words) **198 words**

Capacity building for universities:

Will reach an end-point, after which the universities will take over further training.

Exit strategy: Produce teaching materials. Identify and train competent staff to deliver courses over long-term.

Problem: Trained or enthusiastic people might leave.

Solution: Provide training to many junior staff and graduate students. Involve department management in programme development to convince them of the benefits. Strengthen links with WWF and FPD such that demand for trainees continues for future projects.

Research for sustainable management:

Will reach an end point, but monitoring and conservation actions need to continue.

Exit strategy: Present and discuss final conclusions of research in a multi-stakeholder workshop, following continuous collaboration throughout project term. Train FPD staff in monitoring and analysis methods.

Problem: Funds or interest might be insufficient for ongoing monitoring and action.

Solution: Stimulate enthusiasm of national and provincial agencies for conservation of the flagship Saola. Work with WWF to secure further funding and to develop sustainable financing mechanisms for protected areas (a current project). Final workshops with FPD and WWF will discuss the recommendations from research and community workshops.

Problem: Trained FPD staff might leave.

Solution: Develop, trial and distribute straightforward, standardized protocols and manuals.

16. If your project includes training and development, please indicate how you will assess the training needs in relation to the overall purpose of the project. Who are the target groups? How will the training be delivered? What skills and knowledge to you expect the beneficiaries to obtain. How will you measure training effectiveness. (Max 300 words) **300 words**

You should address each of these points.

Aims, (c.f. project purpose in log-frame)

- i. for current project research
- ii. building long-term research capacity
- iii. in the use of management tools developed by this project.

Aims are indicated below by roman numerals.

Short courses

Relevance: i) skills in participatory mapping, community liaison and field surveys. ii) train future teachers in basic research skills. iii) train FPD staff in survey and analysis skills relevant to management.

Target groups: FPD staff, masters and undergraduate students.

Method: Intensive 3-10 day courses by DICE staff.

Skills: Participatory mapping, GIS, field surveys for cryptic species; specific tools for monitoring, participatory dialogue, and data storage/analysis

Assessment: Student feedback questionnaires, trainees' subsequent research records.

UK Masters courses

Relevance: i) studies on dynamics of hunting and sign/threat/habitat surveys as masters projects. ii) enhance capacity of future Vietnamese researchers.

Target groups: 2 likely future research/teaching staff of project partners.

Method: Taught modules and dissertation research project.

Skills: ecological and social survey design, resource economics, biodiversity management, field research.

Assessment: Assignments, exams and dissertation.

University lectures

Relevance: ii) training for Vietnam's future researchers, teachers and conservationists, trials of new teaching material.

Target groups: undergraduate and masters students at Vinh and Hue universities.

Method: Lectures by DICE staff

Skills: Aspects of biodiversity management not covered by existing syllabuses, eg, resource economics and wildlife trade

Assessment: Feedback questionnaires from lecturers and students, subsequent discussions with staff.

Vietnam Masters courses

Relevance: i) Participatory maps of ungulate distribution for modelling habitat preferences. ii) As above. iii) maps of resource use and species distribution inform conservation planning.

Target groups: Vinh and Hue masters candidates.

Method: Informal support from project officer in research design and analysis, university lectures and short courses.

Skills: participatory mapping, GIS

Assessment: Course reports, thesis mark

Changes or refinements to this plan will be discussed at annual steering committee meetings.

LOGICAL FRAMEWORK

17. Please enter the details of your project onto the matrix using the note at Annex 3 of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes. (Use no smaller than Arial 10 pt)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>			
<p>Sub-Goal: To contribute to the CBD pledges of Vietnam and Lao to effectively protect their flagship ungulate species and assess the potential for sustainable hunting, though building academic capacity and undertaking applied research linked to community forest management and benefit sharing systems, and to protected area establishment and strengthening.</p>	<ul style="list-style-type: none"> • Academic capacity enhanced for applied research on endemic ungulates and patterns of hunting. • Improved understanding of the impacts of hunting practices on ungulate populations and their potential for sustainability. • Greater commitment by stakeholders and communities to reduce unsustainable hunting and protect ungulate species, especially the flagship saola. 	<ul style="list-style-type: none"> • Quality research, including dissertations and co-authorship on peer reviewed publications, produced by trained students. • Course content changed at Vinh University. • Participatory maps of ungulate distribution and hunting across the northern Annamites. • Bio-economic model of hunting patterns produced for the Hue-Quang Nam landscape. • Management plans include sustainable solutions for ungulate conservation. 	
<p>Purpose More effective conservation of a globally important ecosystem by i) conducting applied conservation research on the highly endemic Annamite ungulate community and threats posed by hunting, ii) strengthening the capacity of leading universities within the region to produce well-trained graduates in biodiversity conservation who value traditional knowledge and iii) influencing on-the-ground community and government forest management systems.</p>	<ul style="list-style-type: none"> • Clear understanding of how to reconcile hunting, livelihoods and conservation through a bio-economic model. • First accurate understanding of distribution and habitat of endemic ungulates across northern Annamites • Capacity of research organisations enhanced through UK MSc training of two trainers and support in developing courses. • 10 Vietnamese and Laotian masters and 20 undergraduate projects supervised by UK experts. • Forest management plans incorporate needs of ungulate species and local people. 	<ul style="list-style-type: none"> • Map of endemic ungulate distribution and habitat requirements produced. • Report on results of bio-economic modelling. • Course outline documents, teaching aids and student feedback forms produced. • Two MSc students graduate from University of Kent. • Degree certificates from Vinh and Hue universities, Vietnam. • Management plans written. 	<ul style="list-style-type: none"> • Flagship species remain extant. • Sustainable solutions can be reached.

<p>Outputs</p> <p>1. Improved capacity of Vinh University to produce graduates able to deliver the research components of Vietnam and Lao's contributions to the CBD.</p>	<ul style="list-style-type: none"> • Conservation courses developed in Vietnamese university. • Feedback from Vinh University lecturers and students. 	<ul style="list-style-type: none"> • Lesson plans. • Teaching aids and references. • Lecturer feedback questionnaires. • Student feedback questionnaires. 	<ul style="list-style-type: none"> • Individual lecturers willing to collaborate. • Individual lecturers maintain new courses after project ends. • Students appreciate new course content and style of teaching.
<p>2. Training of two Vietnamese students to MSc level at DICE, 10 Vinh and Hue university masters projects, both Lao and Vietnamese, supervised by DICE, and 20 Vinh and Hue university undergraduate projects supervised by DICE.</p>	<ul style="list-style-type: none"> • Students graduate from DICE, and Vinh and Hue, universities. • Thesis reports from each project. 	<ul style="list-style-type: none"> • Official graduation certificates and transcripts. • Dissertation reports and marks. 	<ul style="list-style-type: none"> • Students with sufficient English skills exist. • Students successfully complete fieldwork. • Weather and other unknown variables do not prevent completion of fieldwork. • Students obtain permission for fieldwork.
<p>3. Applied research ties all student work together into two outputs: i) models of endemic ungulate distribution across the wider landscape; ii) bio-economic model of hunting and ungulate abundance in the Hue-Quang Nam landscape.</p>	<ul style="list-style-type: none"> • Report and published manuscript on the distribution of endemic ungulates across their range in Vietnam and Lao with recommendations on how to strengthen the two protected area systems to support national pledges to the CBD. • Report and published manuscript on the bio-economics of the Hue-Quang Nam landscape and its implications for saola conservation at the community, protected area and ecosystem levels. 	<ul style="list-style-type: none"> • Reports published. • Manuscripts submitted to peer-reviewed journal. • Governments pledge to strengthen protected area systems to accommodate conservation needs of endemic ungulates. 	<ul style="list-style-type: none"> • Permission to publish reports granted by local authorities. • Journals accept submitted manuscripts. • Governments willing to expand the protected area system.
<p>4. Forest management plans within the Hue-Quang Nam landscape incorporate the results of applied saola research to the benefit of conservation and community benefit sharing mechanisms.</p>	<ul style="list-style-type: none"> • Community forest management systems adapted based on the results of bioeconomic model. • New protected area management plans incorporate the results of participatory mapping, ungulate and snare distribution surveys and the bio-economic model 	<ul style="list-style-type: none"> • Community forest management plans produced. • Protected area annual plans incorporate adaptive management for endemic ungulates. 	<ul style="list-style-type: none"> • Results of research indicate changes to management plans are required. • Government agencies accept adapted community forestry model. • Communities willing to conserve endemic ungulates. • Protected area management boards willing to adapt.

Activities (details in workplan)

1: Building research capacity in the long term

- 1.1: Identify gaps in current syllabuses
- 1.2: Planning workshop with staff from DICE and Vinh university
- 1.3: Lectures by DICE staff at Vietnamese universities
- 1.4: Development of new teaching materials
- 1.5: Training for Vietnamese university staff

2: Training for young national researchers

- 2.1: Community mapping training (10 masters students and FPD staff)
- 2.2: Training in GIS (students, FPD and university staff)
- 2.3: Training in basic ecological survey methods (students, FPD and university staff)
- 2.4 Training in basic social survey methods (students, FPD and university staff)
- 2.5: Conservation Biology training at DICE (1 Masters student) (will include training relevant to landscape-wide snare and habitat surveys)
- 2.6: Wildlife trade training at DICE (1 Masters student) (will include training relevant to research into hunting patterns)
- 2.7: Training in analysis and interpretation of monitoring and other management data (FPD staff)

3: Applied research for conservation

- 3.1: Construct range-wide database
- 3.2: Construction of Participatory GIS
- 3.3: Expert workshop
- 3.4: Community mapping in Hue – Quang Nam
- 3.5: Range-wide community mapping
- 3.6: Species distribution modelling
- 3.7: Specific training for research into hunting patterns
- 3.8: Landscape-wide snare and habitat surveys
- 3.9: Targeted Saola surveys
- 3.10: Bio-economic modelling

4: Collaborative management planning

- 4.1: Research planning workshops
- 4.2: Protected area management planning & zonation
- 4.3: Evaluation of participatory resource-use planning approaches
- 4.4: Participatory Resource Use Planning

Monitoring activities:

Analysis of feedback forms from trainers and trainees on all courses. Data on snare distribution, before and after action by FPD or communities, collected by independent surveys in Hue–Quang Nam landscape. Participatory GIS map of current distribution and recent extirpations of endemic ungulates across wider landscape. Bio-economic assessment of the potential of current and novel management models to conserve endemic ungulates. Comprehensive review of the extent to which management plans for new protected areas incorporate recommendations from this project. Ability to participate in co-authored peer review publications.

18. Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project.

	Activity	Months	Year 1				Year 2				Year 3			
			1	2	3	4	1	2	3	4	1	2	3	4
1.1	Identify gaps in current syllabuses	1	■											
1.2	Planning workshop	1	■											
1.3	Lectures by DICE staff at VN universities	3			■			■	■					
1.4	Development of new teaching materials	3								■	■			
1.5	Training for VN university staff	4										■	■	■
2.1	Community mapping training	2	■				■							
2.2	Community mapping in Hue – Quang Nam	5	■				■							
2.3	Range-wide community mapping	2					■	■						
2.4	Training in GIS	2			■				■					
2.5	Species distribution modelling	6			■	■	■		■	■				
2.6	Conservation Biology training at DICE	10						■	■	■		■		
2.7	Landscape-wide snare and habitat surveys	7		■				■			■			
2.8	Wildlife trade course at DICE	10			■	■	■		■					
2.9	Research into hunting patterns	11					■							
3.1	Construct range-wide database	1	■											
3.2	Construction of PGIS	2			■									
3.3	Expert workshop	1	■											
3.4	Targeted Saola surveys	4		■				■		■		■		
3.5	Bio-economic modelling	7	■			■				■				■
4.1	Research planning workshops	1	■		■				■			■		
4.2	Protected area management planning & zonation	4		■		■								
4.3	Evaluation of participatory resource-use planning approaches	2												■
4.4	Participatory Resource Use Planning	4				■	■			■	■			

19. Please indicate which of the following Standard Measures you are likely to report against.

You will not necessarily plan to cover all these Standard Measures in your project.

Standard Measure No	Description	Tick if Relevant
1A	Number of people to submit thesis for PhD qualification (in host country)	
1B	Number of people to attain PhD qualification (in host country)	
2	Number of people to attain Masters qualification (MSc, MPhil etc)	√
3	Number of people to attain other qualifications (ie. Not outputs 1 or 2 above)	
4A	Number of undergraduate students to receive training	√
4B	Number of training weeks to be provided	√
4C	Number of postgraduate students to receive training	√
4D	Number of training weeks to be provided	√
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)	√
6B	Number of training weeks to be provided	√
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country	√
8	Number of weeks to be spent by UK project staff on project work in the host country	√
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country	√
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	√
11A	Number of papers to be published in peer reviewed journals	√
11B	Number of papers to be submitted to peer reviewed journals	√
12A	Number of computer based databases to be established and handed over to host country	√
12B	Number of computer based databases to be enhanced and handed over to host country	
13A	Number of species reference collections to be established and handed over to host country(ies)	
13B	Number of species reference collections to be enhanced and handed over to host country(ies)	
14A	Number of conferences/seminars/ workshops to be organised to present/disseminate findings	√
14B	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	√
15A	Number of national press releases in host country(ies)	√
15B	Number of local press releases in host country(ies)	√
15C	Number of national press releases in UK	√
15D	Number of local press releases in UK	
16A	Number of newsletters to be produced	
16B	Estimated circulation of each newsletter in the host country(ies)	
16C	Estimated circulation of each newsletter in the UK	
17A	Number of dissemination networks to be established	
17B	Number of dissemination networks to be enhanced/ extended	√
18A	Number of national TV programmes/features in host country(ies)	√
18B	Number of national TV programmes/features in UK	√
18C	Number of local TV programmes/features in host country(ies)	√
18D	Number of local TV programmes/features in UK	
19A	Number of national radio interviews/features in host county(ies)	√
19B	Number of national radio interviews/features in UK	√
19C	Number of local radio interviews/features in host country(ies)	√
19D	Number of local radio interviews/features in UK	√
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	√
21	Number of permanent educational/training/research facilities or organisations to be established and then continued after Darwin funding has ceased	
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work	√

PROJECT BASED MONITORING AND EVALUATION

20. Describe, referring to the Indicators in the Logical Framework, how the progress of the project will be monitored and evaluated, including towards delivery of its outputs and in terms of achieving its overall purpose. This should be during the lifetime of the project and at its conclusion. Please include information on how host country partners will be included in the monitoring and evaluation.

At annual meetings of the project steering committee, the Project Leader and representatives of all partner organisations will assess progress against agreed workplans and revise the workplan for the coming year.

A review of all research conducted by students will be compiled along with a record of grades received and papers submitted for publication. Feedback from student and staff questionnaire surveys will be compiled annually to assess the effectiveness of training and to adapt in subsequent years.

The success of the bio-economic model and participatory maps will be evaluated not only on scientific criteria but also in terms of the degree which FPD find them useful in conservation decision making. This will be assessed by an informal survey of FPD opinions at the end of the project and by a review of the degree to which management planning incorporating research findings.

Research conducted by DICE masters students will be subject to review by internal and external examiners. DICE staff will also assist in evaluating research by Masters students in Vietnam.

This project will provide benefits to the wider conservation programme in terms of monitoring and evaluation. Survey results on snare density and ungulate occupancy will provide data on the effectiveness of enforcement and community-based conservation actions. Detailed study of the economics of hunting in a villages where community co-management has been established will help to evaluate the effectiveness of these measures in terms of reducing unsustainable hunting.

All of this information will be presented at the culmination of the project in a final workshop at which overall progress will be reviewed and a timetable for future activities agreed.

FUNDING AND BUDGET

Please complete the separate Excel spreadsheet which will provide the Budget information for this application. Some of the questions below refer to the information in this spreadsheet.

NB: Please state all costs by financial year (April to March). Use current prices – and include anticipated inflation, as appropriate up to 3% per annum. The Darwin Initiative will not be able to agree increases in grants to cover inflation on UK costs once grants are awarded.

21. How is your organisation currently funded? (Max 100 words) 46 words

As a budget centre within the University of Kent, DICE receives funding from central government for its teaching and the quality of its research, ranked as 5 in the last RAE, from grants awarded from UK and international charities and research bodies, and from commercial activities.

22. Provide details of all confirmed funding sources identified in the Budget that will be put towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity. Please include any additional unconfirmed funding the project will attract to carry out addition work during or beyond the project lifetime. Indicate those funding sources which are confirmed.

Confirmed: DICE will contribute 10% of **Leader-Williams'** time as Project Leader, 5% of Dr DC **MacMillan's** time to lead on aspects related to bio-economic modelling and training in applied resource economics, and 5% of Dr AM **Rosser's** time to lead on aspects related to research and training in wildlife trade issues, to a total of £49,678 over the project period.

WWF has funds from related projects in Vietnam which, along with a small amount of core funding is expected to total £91,000, mainly for supporting protected area management in the saola range through management planning, development work with buffer zone communities and supporting government and community patrols. WWF also has funding for work on species habitat distribution modelling which is part of WWF's wider efforts to predict effects of climate change in the region.

Provincial FPDs in Hue and Quang Nam receive government funding amounting to approximately £10,000 for action against unsustainable hunting and non-timber forest product extraction in project areas.

AMNH has received funding for 2009 for work on Saola from the Disney Wildlife Conservation Fund and from the Sea World – Busch Gardens and have funds to analyse genetic samples from dung surveys in their lab.

Vinh university will contribute to office costs for the university component of the project.

Unconfirmed: WWF's SAF fund and the Disney and Sea-World grants held by AMNH are awarded on an

annual basis and are likely to be re-awarded in subsequent project years. AMNH has also applied for funding from the Critical Ecosystem Partnership Fund and to the German government for work in the Vietnamese Central Annamites which would contribute greatly to this project's conservation impact.

23. Please give details of any further funding resources (confirmed or unconfirmed) sought from the host country partner (s) or others for this project that are not already detailed in the Budget or Question 22. This will include donations in kind or un-costed support eg accommodation. (Max 50 words per box) 98 words

Financial resources:

WWF and AMNH can lever additional international funds from sources awarding relatively small sums on an annual basis for field research and community work. Likewise, additional stakeholders including WCS, ZSL and the Smithsonian Institution all have potential access to research funding. However, a unified research effort is required to organise these funds and spend them efficiently.

Funding in kind:

WWF, FPD and Vinh University will all offer support by providing office space, with requirements to be determined at the first steering committee meeting. WWF will also provide support in kind for local transport in Thua Thien Hue and Quang Nam provinces.

FCO NOTIFICATIONS

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

Please indicate whether you have contacted the local UK embassy or High Commission directly to discuss security issues (see Guidance Notes) and attach any advice you have received from them.

Yes (no written advice) Yes, advice attached No

CERTIFICATION 2009/10

On behalf of the University of Kent

(*delete as appropriate)

I apply for a grant of £100,567 in respect of expenditure to be incurred in the financial year ending 31 March 2010 on the activities specified in the above application.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful. (This form should be signed by an individual authorised by the lead UK institution to submit applications and sign contracts on their behalf.)

I enclose a copy of the organisation's most recent audited accounts and annual report, CVs for project principals and letters of support.

Name (block capitals)	
Position in the organisation	

S i g n a t u r e	
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Stage 2 Application - Checklist for submission

	Check
Have you provided actual start and end dates for your project?	Yes
Have you provided your budget based on UK government financial years ie 1 April – 31 March?	Yes
Have you checked that your budget is complete, correctly adds up and that you have included the correct final total on the top page of the application?	Yes
Is the concept note within 1,000 words?	Yes
Is the logframe no longer than 2 pages and have you highlighted any changes since Stage 1?	Yes
Has your application been signed by a suitably authorised individual? (clear electronic or scanned signatures are acceptable)	Yes
Have you included a 1 page CV for the Project Leader, any other UK staff working 50%+ on this project, and for a main individual in each overseas partner organisation?	Yes
Have you included a letter of support from the main overseas partner organisations?	Yes
Have you checked with the FCO in the project country/ies and have you included any evidence of this?	Yes
Have you included a copy of your most recent annual report and accounts? An electronic link to a website is acceptable.	Yes
Have you read the Guidance Notes ?	Yes

Once you have answered Yes to the questions above, please submit the application, not later than midnight GMT on **Monday 1 December 2008** to Darwin-Applications@ltsi.co.uk using the application number (from your Stage 1 feedback letter) and the first few words of the project title **as the subject of your email**. However, if you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (eg whether the e-mail is 1 of 2, 2 of 3 etc). **In addition**, a hard copy of the application and any supporting documents not available electronically should be submitted to the Darwin Applications Management Unit, c/o ECTF, Pentlands Science Park, Bush Loan, Penicuik EH26 0PL **postmarked** not later than **Tuesday 2 December 2008**.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of the Darwin Initiative. Application form data will also be held by contractors dealing with Darwin Initiative monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (ie name, contact details and location of project work) on the Darwin Initiative and Defra websites(details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Foreign and Commonwealth Office posts outside the United Kingdom, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.