Submit by 21 January 2005

DARWIN INITIATIVE APPLICATION FOR GRANT ROUND 13 COMPETITION:STAGE 2

Please read the Guidance Notes before completing this form. Applications will be considered on the basis of information submitted on this form and you should give a full answer to each question. Please do not cross-refer to information in separate documents except where invited on this form. The space provided indicates the level of detail required. Please do not reduce the font size below 11pt or alter the paragraph spacing. Keep within word limits.

1. Name and address of organisation

Name:	**Address:**
CABI Bioscience	**Bakeham Lane, Egham, Surrey TW20 9TY, UK**

2. Project title (not exceeding 10 words)

GOING FOR GOLD – CORDYCEPS CONSERVATION IN BHUTAN

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

Proposed start date:	**May 2005**		**Duration of project: 3 years 6 months** [to allow four field seasons running May – July]		
Darwin funding requested	**Total**	**2005/06**	**2006/07**	**2007/08**	**2008/09**
	£204,936	**£59,890**	**£46,829**	**£59,388**	**£39,369**

4. Define the purpose of the project in line with the logical framework

Harvest of the fungus *Cordyceps sinensis* in fragile natural ecosystems in Bhutan is currently highly lucrative but almost certainly unsustainable. The project will work with local stakeholders to achieve sustainable harvest through regulation of collection and habitat preservation, contributing also to protection of other vulnerable species. Capacity building will enable research into the biology of the fungus and its insect host, and into methods for their cultivation. This will reduce pressure on natural populations while maintaining local livelihoods.

5. Principals in project. Please provide a one page CV for each of these named individuals

Details	**Project Leader**	**Other UK personnel (working more than 50% of their time on project)**	**Main project partner or co-ordinator in host country**
Surname	CANNON		TSHITILA
Forename (s)	Paul Francis		[none]
Post held	Section Leader		Programme Officer
Institution	CABI Bioscience		Council of Renewable Natural Resources Research of Bhutan
Department	Ecology Systematics & Biodiversity		Medicinal and Aromatic Plants (MAP) Research Programme
Telephone			
Email			

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

Yes. Fungal herbarium database (Ukraine, Round 1); Darwin Fellows Programme (various, Round 1); Microbial diversity & culture collections (Indonesia, Round 2); Effects of logging on invertebrates (Guyana, Round 3); Conservation of rare plants and associated fungi (Kenya, Round 5); Identification service capacity building in the Caribbean (with BioNET; round 5); Insect biodiversity capacity building (Guyana, round 6); Biodiversity management around a Ramsar site (Turks & Caicos, round 7); Biodiversity information in the former Soviet Union (with BioNET; round 7); Biodiversity conservation in Cuba (with BioNET; round 9); Recovering Ukraine's lost steppe land (Round 10); Sustainable management of alien invasive weeds in China (round 11)

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 overseas partners that will be involved in their project and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. What steps have been taken to ensure the benefits of the project will continue despite any staff changes in these organisations? Please provide written evidence of partnerships.

- Council of Renewable Natural Resources Research (CORRB), Ministry of Agriculture, Bhutan; *main project partner*
- Nature Conservation Division (NCD), Ministry of Agriculture, Bhutan; *national park administration*
- Jigme Dorji National Park, Bhutan; *main site for project work*
- Dasho Dungpa [local government leader], Dunkhag Administration Lingshi [administrative region], Bhutan; *organization of local stakeholders*
- Local people of Soe Yaksa and Lingshi, Bhutan; *local stakeholders and project workers*
- BIOTEC (National Council for Genetic Engineering & Biotechnology), Thailand; *consultancy on Cordyceps biology*

The Medicinal and Aromatic Plants (MAP) Research Programme of CORRB is the main project partner and driver of the programme. CORRB will be responsible for project administration within Bhutan and local financial control, provision of support services, employment of Bhutanese research workers, and coordination with other agencies. CORRB will also lead in implementation of legislative aspects of sustainable harvest measures and regulation of farming activities.

CORRB and NCD are divisions within the Ministry of Agriculture, Bhutan, and are specifically mandated to work together on conservation and sustainable use initiatives. The National Park system is administered through NCD; Jigme Dorji NP is the largest protected area in Bhutan and the site for earlier *Cordyceps* development work. NCD will facilitate field work and organization of study sites, provide research support, coordinate ecotourism-related activities, and enforce conservation measures.

The active involvement of local stakeholders will be central to the programme and essential to its success, including assistance with survey work, protection of study sites and support for farming initiatives. BIOTEC will provide support through a UK national specialist in *Cordyceps* biology.

The project originated via a request from NCD to CORRB to advise on appropriate regulations for *Cordyceps* harvest following its legalization for Bhutanese nationals. Initial survey and market analysis was carried out via consultancies by Dr Nigel Hywel-Jones of BIOTEC in 2002 and 2004, that provided valuable data on the scale of current exploitation and indications of the impact of its legalization. CABI was not

directly involved at this stage, but was aware of the programme and provided initial inputs as to the feasibility of *Cordyceps* farming. The current proposal arose from a gap analysis of the previous programme, leading to the establishment of a three-way partnership between CORRB, CABI and BIOTEC. All organizations participated fully in the project development process, commenting on the original concept, contributing to each component and approving the final document.

Cordyceps harvest is a key sustainability issue for CORRB and NCD, and its financial value [estimated to be around $US 20 million p.a. – roughly equivalent to the *entire* official value of all exports from Bhutan excluding energy; much of the current export market is "grey"] will keep it near the top of the list of national priorities, assuming that long-term supply can be guaranteed. There are therefore strong fiscal as well as conservation-related incentives for the Bhutanese Government to sustain the project and to implement its findings, and the employment security (and prompt replacement as necessary) of project staff will be prioritized by the Ministry of Agriculture.

9. What other consultation or co-operation will take place or has taken place already with other stakeholders such as local communities? Please include details of any contact with the government not already provided.

Extensive consultation has been carried out over the last five years with the local communities in Jigme Dorji NP, focusing initially on the legalization of *Cordyceps* harvesting as a means of controlling illegal poaching across the border from Tibet. Further work in collaboration with the NP communities and local buyers established the likely extent and financial value of recent harvests. Relations between the CORRB and the communities of the *Cordyceps* growing areas are excellent. There is currently a high level of trust between researchers and indigenous communities, and we are confident that full cooperation will be extended for any project on sustainability of a commodity that is so critical to local livelihoods. The *Cordyceps* harvesters are all too aware of the inevitable result of unsustainable collection, and would undoubtedly benefit significantly if *Cordyceps* farming was to be established.

PROJECT DETAILS

10. Is this a new initiative or a development of existing work (funded through any source?) Are you aware of any other individuals/organisations carrying out similar work, or of any completed or existing Darwin Initiative projects relevant to your work? If so, please give details explaining similarities and differences and showing how results of your work will be additional to any similar work and what attempts have/will be made to co-operate with and learn lessons from such work for mutual benefits.

The project is complementary to an EU-funded programme "Cultivation of Medicinal Plants for Traditional Medicine" (ALA/22/ 92). The first phase ran between 1993 and 1998, and a second phase (EuropeAid/116552/C/SV/IN; 2004-2007) is now in place. The programme is run for EuropeAid by LTS International, an international consultancy firm and one of the partner organizations of the Edinburgh Centre for Tropical Forests. This project focuses on plants rather than insect fungi, and some of its outputs (such as IPR and business plan development) will be relevant to the Darwin Project. However, key activities proposed here are not addressed, including the experimental work to establish *Cordyceps* sustainability levels, research on insect biology and the development of farming techniques. Close liaison will be maintained with LTS International, ensuring that the two programmes are fully complementary and that outputs of both are maximized.

The proposed project builds on a UNDP-funded programme "Integrated Horticulture Development Project" that ran between 1998 and 2002, and led to the legalization of *Cordyceps* collection in Bhutan, and the geographical focus of trade shifting to the capital Thimphu rather than illegally across the border to Tibet. Again, key sustainability issues remain to be addressed and the potential for farming was not considered. UNDP and GEF have funded development of an integrated management plan for Jigme Dorji National Park, and the Darwin project will contribute to its implementation. The Swiss NGO Helvetas provided consultancy funds that allowed CORRB and BIOTEC (partners in this project) to carry out initial analysis of trade and impact of harvest, leading directly to development of this proposal. Synergy between all these initiatives will be maximized, and CORRB has pledged that all results will be made available to the Darwin programme.

11. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please make reference to the relevant article(s) of the CBD thematic programmes and/or cross-cutting themes (see Annex C for list and worked example) and rank the relevance of the project to these by indicating percentages. Is any liaison proposed with the CBD national focal point in the host country? Further information about the CBD can be found on the Darwin website or CBD website.

Collaborative research and development activities with full stakeholder participation will allow the Royal Bhutanese Government to achieve conservation of *Cordyceps sinensis*. This will occur through implementation of sustainable harvest strategies and ex-situ conservation (farming), protecting the livelihoods of resource-poor indigenous communities. The project will support the Government's implementation especially of Articles 6 (5%), 7 (5%), 8 (10%), 9 (25%), 10 (40%) and 12 (15%) of the CBD, and of the themes "Access and Benefit Sharing", "Economics, Trade and Incentives", "Mountain Biodiversity", "Protected Areas", Sustainable Use and Biodiversity" and "Traditional Knowledge, Innovations and Practices".

The CBD Focal Point for Bhutan resides within the National Environment Commission, a cross-cutting body chaired by the Minister for Agriculture [CORRB and NCD are agencies of the MoA]. Appropriate liaison will take place to ensure that project activities are reported on as evidence of CBD implementation.

12. How does the work meet a clearly identifiable biodiversity need or priority defined by the host country? Please indicate how this work will fit in with National Biodiversity Strategies or Environmental Action Plans, if applicable.

Bhutan's Biodiversity Action Plan was published in 2002. *Cordyceps sinensis* was one of only seven non-animal species listed in Schedule 1 of the Forest and Nature Conservation Act of Bhutan, and anti-poaching measures are described [these have subsequently been partially superseded following legalization of harvest]. In recognition of the need to allow limited legal harvest to combat illegal poaching, *C. sinensis* was removed from Schedule 1 in 2004, but the strong determination remains to protect the species. Priority subjects for future research in protected areas are listed in the BAP. The project will directly address two activities for Jigme Dorji NP – "Mapping of areas with *Cordyceps*" and "Impact of yak grazing on alpine meadows", and goes beyond the printed plan as conceived in 2002 to establish sustainability of harvest and potential for farming. Survey on non-timber forest products (especially the highly valuable *matsutake* fungus) are also highlighted for both Jigme Dorji and Thrumshingla NPs, and while this project will not address these directly, overall capacity building for mycology will improve local expertise to achieve these goals. The BAP highlights the value of cottage industries for sustainable exploitation of biodiversity, as planned here. Other areas of the BAP to which this project will contribute are: 2.2.1.12 (Integrated conservation and development plans in Protected Areas", 2.2.4.2 (Traditional knowledge about biodiversity and its use), 3.1.1.3 (Promoting in-situ conservation of … wild plants for food production), 4.1.2.5 (Research on Sustainable Use) and 4.1.7 (Assure that biodiversity conservation brings benefits to local people)

The project also contributes directly to implementation of the B2C2 (Bhutan Biological Conservation Complex), a multi-stakeholder joint initiative led by the Nature Conservation Division and WWF Bhutan to maintain Bhutan's enlightened approach to natural resource conservation through the development of integrated conservation and development plans.

13. If relevant, please explain how the work will contribute to sustainable livelihoods in the host country.

There are more than 1000 households in the Jigme Dorji NP, primarily existing through yak herding. *Cordyceps* collection (whether legal or illegal) currently provides at least 50% of annual income for many, so establishing and regulating sustainable harvest levels is crucial to their long-term prosperity. Farming *Cordyceps* should be possible by indigenous people using very basic equipment and practices, providing a more reliable long-term source of income and reducing impact on the environment. Sustainability measures will be implemented on a national basis, and farming would almost certainly spread to other areas in Bhutan with suitable environments for cultivation.

14. What will be the impact of the work, and how will this be achieved? Please include details of how the results of the project will be disseminated and put into effect to achieve this impact.

Impact will be significant at several levels. **On a community level**, financial security of indigenous households in Jigme Dorji NP (and other areas where *Cordyceps* grows) will at least be maximized over the long term, and would be improved significantly with the introduction of *Cordyceps* farming. **On an environmental level**, human-mediated disturbance of montane grasslands in the Jigme Dorji NP and other protected areas will be reduced, improving conservation of indigenous taxa including flagship species such as takin [Bhutan's national animal], snow leopard, musk deer, Himalayan marmot and blue sheep. Conservation of high-altitude plants with medicinal properties (such as *Nardostachys grandiflora* and *Picrorhiza kurroa*, both currently protected by CITES regulation) will be supported; this is currently being addressed via a complementary EU-funded programme. **On a national level**, within-country use of *Cordyceps* in traditional medicine will be protected, and income from taxation of exports will support the development of environmental protection measures. The product is highly prized and measures to safeguard its supply will attract considerable interest from the population at large. **On an international level**, sustainability guidelines and farming technology could be used in other Himalayan nations where *Cordyceps* is harvested.

Dissemination will occur via a number of pathways. Literacy in many of the indigenous households is low (especially among women) so promulgation of revised guidelines and farming techniques will occur verbally, primarily via local meetings but potentially also radio. Dissemination at national level will be via the national radio and television service and the national newspaper, and through public meetings if there is sufficient demand. At international level, papers for academic and popular scientific markets will be prepared, the project will feature on a range of internet resources including a dedicated website, and the UK radio and TV market will be targeted. Popular interest may well be high (indications include *Cordyceps* being featured recently on Michael Palin's television series *Himalaya*, and a feature article appeared in the November 2004 edition of *Geographical*, the RGS magazine), so the potential will be explored for a film of the project for the international TV market.

15. How will the work leave a lasting legacy in the host country or region?

Protection and sustainable harvest of a culturally important native species, leading to sustainable local livelihoods and improved relations between NP authorities and indigenous peoples, will be a major legacy in itself, and the Royal Bhutanese Government is committed to ongoing conservation of *Cordyceps*. There are strong indications that guidelines for wild harvest will be appropriately modified based on project outputs, and that local populations will work with the conservation agencies to implement them. Capacity building will facilitate continuing survey of wild populations, allowing further changes to the guidelines if necessary. If farming proves feasible, a whole new level of legacy will be possible as takeup is likely to be enthusiastic, with obvious benefits to the local populations in exchange for very minor investment.

16. Please give details of a clear exit strategy and state what steps have been taken to identify and address potential problems in achieving impact and legacy.

Strong national support for conservation and sustainability and respect for the environment provide a highly positive climate for successful implementation of the project. Bhutan is politically stable and it is unlikely that any change in Government policy would adversely affect the project. The Ministry of Agriculture is already committing resources to monitoring *Cordyceps* populations and trade in fruit-bodies, and ensuring long-term sustainability of supply will most likely reduce rather than increase the need for activities in this area. There is therefore a high likelihood that project guidelines etc. will be fully implemented.

There are some risks involved in achieving project outputs, primarily linked to the high value of *Cordyceps* and the potential for illegal cross-border interference, disruption of experimental plots etc. These will be addressed through placing the utmost priority in maintaining the current good relations with indigenous communities, and to obtain their active involvement in the programme – through employment on surveys and guarding experiments as well as consultation. This will also reduce the need for hard-pressed NP staff to protect the reserve from illegal *Cordyceps* poachers. Success in farming could raise unrealistic expectations amongst the population at large, and even immigration into the NP by those hoping for rapid cash generation. Our knowledge of *Cordyceps* biology leads us to predict that farming will only be possible at high altitudes. Care will therefore be taken to minimize the risks of ill-informed media coverage, and policies put in place to upgrade NP protection if necessary.

There are some unknowns in the farming component of the project, caused by poor knowledge of the insect host – for example the nature and length of the life cycle, dormancy periods etc., and these will be exacerbated by the short growing season. Risks will be minimized through prioritising research at an early stage of the project and by trawling literature in Chinese, but the project overall can succeed even if farming proves uneconomic, as it will promote sustainable harvest of wild fungi that will be the only option for continued use of the species.

17. How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

The Darwin Initiative will be acknowledged in all public activities, including meetings, training documentation, published articles, websites, notices on experimental plots etc., and the logo will be used where feasible.

18. Will the project include training and development? Please indicate who the trainees will be and criteria for selection and that the level and content of training will be. How many will be involved, and from which countries? How will you measure the effectiveness of the training and will those trained then be able to train others? Where appropriate give the length and dates (if known) of any training course. How will trainee outcomes be monitored after the end of the training?

Formal training courses will not be part of the programme, but many of the activities will have a training component. These include teaching survey techniques to NP staff and local workers, sustainability issues and the concepts of participatory research to indigenous communities, and ecological, statistical, mycological and entomological skills to project workers and NP staff. There will be a mixture of on-the-job training and special days set aside for particular subjects, such as fungus and insect biology and identification. Assessment of training impact will be clear from outputs achieved subsequent to the training.

LOGICAL FRAMEWORK

19. Please enter the details of your project onto the matrix using the note at Annex B of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes.

Project summary	**Measurable Indicators**	**Means of verification**	**Important Assumptions**
Goal: 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 • 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			
Purpose			
Cordyceps sinensis harvest in Bhutan protected and montane grasslands conserved through research and capacity building to achieve sustainable production	1. New knowledge on population and harvest levels, host/parasite relations and host requirements 2. Monitoring/impact scheme in place 3. Local stakeholders in support of conservation 4. Feasibility study and pilot programme for Cordyceps farming 5. Regulatory system in place/modified appropriately, leading to reduction in illegal harvest	1. Reports by National Park, NCD/CORRB and project partners, scientific papers 2. Protocols & survey reports 3. Participation by local population 4. Reports by project partners 5. Regulatory system publicised via meetings, leaflets, liaison with traders etc.; reports from regulatory authorities	1. Government continues to give high priority to *Cordyceps* sustainability 2. Local people support sustainability programme 3. Illegal poaching controlled 4. National agencies liaise effectively
Outputs			
Knowledge of *Cordyceps* incidence and harvest, host/parasite relations and host biology	Reports published and circulated to Government and other stakeholders	Reports sent to Darwin Initiative, scientific papers, habitat management plan	Sufficient information acquired, seasonality issues successfully addressed
Monitoring/impact scheme designed and implemented in consulation with local stakeholders	National Park and NCD/CORRB staff trained, harvesters/ traders mobilized, monitoring in place	Reports and feedback from trainees and institutions, monitoring results collated /sent to Darwin Initiative	Local stakeholders agree to programme, good liaison with National Park and NCD/CORRB
Regulatory system modified in line with project findings and IP concerns, publication of regulations, best practice for harvest etc	Leaflets and policy documents produced, stakeholder meetings taken place	Records of meeting attendence, documents sent to Darwin Initiative	Appropriate authorities liaise to modify regulation, stakeholders on board, effective enforcement of regulation occurs
Pilot project for low-tech *Cordyceps* farming in place	Experimental farm set up, caterpillars raised successfully, inoculation with fungus achieved	Reports of progress, farmed *Cordyceps* available	Information on food plants available, food plant cultivation achieved, caterpillars successfully transferred to farm, inoculation with *Cordyceps* successful
Training and capacity	Number of National	Training materials	Suitable staff released for

building (fungal and insect biology, techniques)	Park, NCD/CORRB staff participating	available, student and manager feedback forms	training, staff able to put training into practice
Activities			
Design and implement surveys to quantify *Cordyceps* habitat, distribution and patterns of exploitation. Investigate yak grazing patterns. Develop methods to locate and survey Lepidoptera host. Develop methods to collect and breed / rear Lepidoptera host (from adult, egg or larval stage). Conduct direct observations of Lepidoptera feeding behaviour and life-cycle and study caterpillar / fungus interactions under field / experimental conditions.		Design surveys and evaluate techniques, year 1. Habitat and exploitation survey years 1-4. Collect host adults (for eggs) and caterpillars from year 1 and continue annually through project. Conduct feeding & life-cycle observations years 1-4. Caterpillar / fungus interaction studies years 2-3.	
Plan and implement policies to maximise participation of local stakeholders. Publicise concept of sustainability. Set up monitoring team and train field surveyors in stakeholder interview, habitat assessment and Lepidoptera survey techniques.		Participatory programme planned year 1. Project introduction meeting to engage local stakeholders by promoting concept of sustainability and inviting stakeholder discussion of community problems and solutions, year 1. Monitoring team established and trained year 1. Implementation of monitoring, years 1-4	
Propagate food plants and grow in experimental garden. Trial alternative food sources for caterpillars. Construct suitable rearing cages and introduce caterpillars. Inoculate caterpillars with *Cordyceps*. Produce new fungus fruiting bodies.		Food plants propagated and grown in experimental garden, year 2; alternative and conventional food sources offered in year 2 and effect on larval growth, survival and ability to host *Cordyceps* studied years 2-4; suitable cages built, caterpillars introduced, years 1-4; results of inoculation with *Cordyceps* assessed, year 3; new fungi produced, year 4.	
Produce training materials; design and run training days on fungi and insects for stakeholders. Elicit trainee feedback.		Training days on fungi and insects, years 2-3.	
Review current regulatory system and modify in the light of research findings, in collaboration with stakeholders at key stages. Develop a strategy to enforce the modified regulatory system.		Current regulatory system reviewed and modifications drafted as agreed/appropriate, year 3. Development of enforcement strategy, years 3-4.	

20. Provide a project implementation timetable that shows the key milestones in project activities.

Project implementation timetable		
Date	Financial year	Key milestones
May 2005 May 2005 June 2005 June 2005 June 2005 August 2005 September 2005 March 2006	April-March 2005/6	• Memorandum of agreement between all partners signed • Production of full literature review on *Cordyceps* and host biology, to take account of Chinese research. • Project inception meeting for Government representatives etc. • Introductory meeting to establish collaboration with NP stakeholders • Selection of study sites • Development and trialling of survey protocols • Website launched • Annual report

April 2006 May 2006 June 2006 June 2006 March 2007	April-March 2006/7	• Food plants established in experimental garden • Methodology for feeding studies finalized • Selection of food plants for inoculation trials • Training day for NP staff • Annual report
July 2007 September 2007 December 2007 December 2007 February 2008 March 2008	April-March 2007/8	• Training day for NP staff • Report on Cordyceps harvest levels (years 1-3) • Results from Cordyceps inoculation analyzed • Report on caterpillar biology • Regulatory system reviewed and revised • Annual report
July 2008 August 2008 October 2008	April-October 2008/9	• Practical work complete • Final project meeting, dissemination of results • Final report
• Note that the schedule of the project allows for 3 full field seasons. Typically production of fungus fruiting bodies occurs annually May- July.		

21. Set out the project's measurable outputs using the separate list of output measures.

PROJECT OUTPUTS		
Year/Month	**Standard output number (see standard output list)**	**Description (include numbers of people involved, publications produced, days/weeks etc.)**
June 2005	14	Inception meeting with Government officials
June 2005	15A	1 national press release in Bhutan
June 2005	14	First meeting with NP stakeholders
June 2005	6A	Training in methodology for 3 project staff
July 2005	15C	1 national press release in UK
October 2005	7	1 Leaflet on *Cordyceps* sustainability issues
June 2006	6A/7	Training day and materials provided for 25 NP staff
July 2007	6A/7	Training day and materials provided for 25 NP staff
December 2007	11	1 Paper submitted to peer-reviewed journal
February 2008	9	1 Habitat management plan for *Cordyceps* and host
February 2008	15A	1 national press release in Bhutan
August 2008	14	Final project dissemination meeting
October 2008	11	1 Paper submitted to peer-reviewed journal
October 2008	15A	1 national press release in Bhutan
October 2008	15C	1 national press release in UK
October 2008	8	40 weeks in-country over project lifetime by UK staff (and consultant) Radio and TV interviews are likely in Bhutan at intervals throughout the project, and we aim to achieve similar media coverage internationally, with the possibility of a film of the work.

MONITORING AND EVALUATION

22. 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.

The first step will be to develop a detailed memorandum of agreement between all project partners, setting out responsibility for activities according to the project implementation timetable, specific performance indicators, mechanisms for modification of the implementation plan (with agreement from the Darwin Initiative if appropriate), generation of reports, and mechanisms for financial control. Commitments will be made to exchange emails, telephone calls and/or internet conversations on at least a monthly basis throughout the year, when all project partners are not in-country. In this way, progress will be closely monitored by all partners and deviations from the implementation plan quickly followed up.

Annual and final reports, as well as all published outputs, will be generated as collaborative activities with responsibility shared equally between the project leaders in Bhutan and the UK, and any remedial actions necessary when outputs are judged against milestones will be agreed jointly. CABI will of course retain overall financial control over the project, and all partners will be expected to account specifically for funds provided to them.