



Submit by Monday 2 December 2013

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 20: 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.

ELIGIBILITY

1. Name and address of organisation (NB: Notification of results will be by email to the Project Leader)

Name of organisation: James Hutton Institute	Address: The James Hutton Institute, Invergowrie, Dundee, DD2 5DA, UK
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2. Stage 1 reference and Project title

(max 10 words) Stage 1 Reference - 2499
 Building mycological capacity for sustainable resource management in Lao PDR

3. Project dates, and budget summary

Start date: 1/4/2014		End date: 31/3/2017		Duration: 36 Months
Darwin request	2014/15 £101,220	2015/16 £96,603	2016/17 £45,796	Total £243619
Proposed (confirmed and unconfirmed) matched funding as percentage of total Project cost: £152,446				
Are you applying for DFID or Defra funding? (Note you cannot apply for both)		DFID No	Defra Yes	

4. Define the outcome of the project. This should be a repetition of Question 24, Outcome Statement.

(max 30 words)
 To enable Laos PDR to manage its mycological resources and fulfil CBD commitments through increasing awareness of fungi, their conservation, economic sustainability, and ecological importance.

5. Country(ies)

Which eligible host country(ies) will your project be working in. You may copy and paste this table if you need to provide details of more than four countries.

Country 1: Lao PDR	Country 2:
Country 3:	Country 4:

6. Biodiversity Conventions

Which of the three conventions supported by the Darwin Initiative will your project be supporting? Note: projects supporting more than one convention will not achieve a higher scoring

Convention On Biological Diversity (CBD)	Yes
Convention on Migratory Species (CMS)	No
Convention on International Trade in Endangered Species (CITES)	No

6b. Biodiversity Conventions

Please detail how your project will contribute to the objectives of the convention(s) your project is targeting. You may wish to refer to Articles or Programmes of Work here.

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

(Max 200 words)

The total lack of current and historical mycological expertise in Laos and the pivotal and varied roles of fungi in ecosystems, means that the project contributes across a broad range of goals and targets of the CBD: many of these are highlighted as requiring advancement in the recent (2012) Assessment of the 2004 NBSAP 2020 produced by Lao PDR – particularly in 'lesser known groups'. This project addresses the following CBD articles: 6 (Conservation & sustainable use, 10%); 7 (Identification and Monitoring, 10%), 12 (Training, 40%); 14 (Impact Assessment and Minimizing Adverse Impacts, 10%); 16 (Access and transfer of technology, 10%). It will also assist in the implementation of Articles 17 (Information exchange), 15 (Access to Genetic Resources) (5% each).

Cross-cutting themes that the project is orientated towards include: Public Awareness and Education (20%); Genetic Resources and Benefit Sharing (10%); Global Taxonomy Initiative (20%); Identification, Monitoring and Indicators (25%); Sustainable use of Biodiversity (25%).

Is any liaison proposed with the CBD/CITES/CMS focal point in the host country?

Yes No if yes, please give details:

The Lao PDR CBD office in Vientiane will be consulted during the project. Dr. Souriodong SUNDARA at Biotechnology and Ecology Institute, Ministry of Science and Technology is the coordinator for the CBD Biosafety National Focal Point and is a central partner in the project. He will be part of the Project Steering Committee and involved in all aspects of project planning.

7. Principals in project. Please identify and 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 personnel or more than one project partner.

Details	Project Leader	Project Partner 1 - Main	Project Partner 2
Surname	Taylor	Newman	Sundara
Forename (s)	Andrew Forsyth Scott	Mark	Souriodong
Post held	Principal Research Scientist	Senior Scientific Officer	Director General
Institution (if different to above)		Royal Botanic Garden Edinburgh	Ministry of Science and Technology, Laos

Department	Ecological sciences	Systematics & Evolution	Biotechnology and Ecology Institute
Telephone			
Email			

Details	Project Partner 3	Project Partner 4	Project Partner 5
Surname	Lamxay	Urmas	Verbeken
Forename(s)	Vichith	Kõljalg	Mieke
Post held	Head of Postgraduate Affairs	Professor	Professor
Institution (if different to above)	National University of Laos	University of Tartu, Estonia	Ghent University, Belgium
Department	Faculty of Science	Institute of Botany and Ecology	Biology
Telephone			
Email			

Details	Project Partner 6	Project Partner 7	Project Partner 8
Surname	Binder	Flint	Pedersen
Forename(s)	Manfred	Christopher	Ole Sparre
Post held	Fungal molecular systematist	Chief Technical Advisor and Team Leader	Chief Technical Advisor
Institution (if different to above)	The Centraalbureau voor Schimmelcultures (CBS)	Ministry of Agriculture and Forestry	Ministry of Agriculture and Forestry
Department	Evolutionary Phytopathology, Fungal Biodiversity Centre	TABI: The Agro-Biodiversity Initiative, Lao PDR.	ABP: Agrobiodiversity Project
Telephone			
Email			

8. Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)? If so, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
17-007	Justin Irvine	Building natural resource monitoring capacity in Ethiopia's key Afro-montane ecosystems

9a. If you answered 'NO' to Question 8 please complete Question 9a, b and c.

If you answered 'YES', please go to Question 10 (and delete the boxes for Q9a, 9b and 9c)

What year was your organisation established/ incorporated/ registered?	
What is the legal status of your organisation?	NGO Yes/No Government Yes/No University Yes/No Other (explain)
Type of organisation (e.g. University, NGO, private sector, Government Department etc)	
Have you unsuccessfully applied to the Darwin Initiative before? If yes please provide the application reference number(s)	
How is your organisation currently funded?	(Max 100 words)
Have you provided the requested audited/independently examined accounts?	Yes/No

9b. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 8.

Provide detail of 3 contracts previously held by your institution that demonstrate your credibility as a research organisation and provide track record relevant to the project proposed. These contacts should have been held in the last 5 years and be of a similar size to the grant requested in your Darwin application.

Contract 1 Title	
Contract Value	
Contract Duration	
Role of institution in project	
Brief summary of the aims, objectives and outcomes of the contract.	
Client reference contact details (Name, e-mail, address, phone number).	

Contract 2 Title	
Contract Value	
Contract Duration	
Role of institution in project	
Brief summary of the aims, objectives and outcomes of the contract.	

Client reference contact details (Name, e-mail, address, phone number)	
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Contract 3 Title	
Contract Value	
Contract Duration	
Role of institution in project	
Brief summary of the aims, objectives and outcomes of the contract.	
Client reference contact details (Name, e-mail, address, phone number).	

9c. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 8.

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)

10. Please list all the partners involved (including the Lead Institution) 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 partners to be involved in the project. Please provide written evidence of partnerships. Please copy/delete boxes for more or fewer partnerships.

<p>Lead institution and website:</p> <p>James Hutton Institute, http://www.hutton.ac.uk/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The James Hutton Institute undertakes research and engagement to deliver evidence-based solutions to the global challenges facing land and natural resource use both now and in the future. A major area of multidisciplinary research is sustainable natural resource management. It has a successful history of coordinating international projects and has appropriate financial management systems.</p> <p>Dr Andy Taylor provides overall coordination of the project as well as extensive mycological expertise and individual capacity building. He has a very broad ecological and taxonomic knowledge of fungi in a range of ecosystems including tropical systems and extensive experience in utilising fungi in the laboratory. He has existing strong collaborative links with many of the project partners, particularly through the foundation of the highly successful UNITE database (http://unite.ut.ee/), in which he was a founder member and for some time coordinator of the research network.</p>
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<p>Partner Name and website where available:</p> <p>Royal Botanic Garden Edinburgh http://www.rbge.org.uk/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>RBGE's mission is to explore and explain the world of plants through programmes of scientific research, horticulture, conservation and education. RBGE carries out an international programme of research in plant taxonomy, systematics and conservation in more than forty countries and maintains and develops living and preserved plant collections.</p> <p>Dr Mark Newman has an established a strong network of contacts in a range of organisations in Lao from previous visits and projects (including Darwin Initiative projects). He has previously supported training for a Lao botanist at the RBGE. His experience in working in Laos and his linguistic skills are an invaluable asset to this project. In addition, he will provide taxonomic expertise on the plants during the recording of metadata for case studies and on the interpretation of the phytoecological requirements for fungi. Dr Newman initiated the original idea for the project and has been integral to its development and preparation.</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>Partner Name and website where available:</p> <p>Biotechnology and Ecology Institute, Ministry of Science and Technology (MOST), Lao PDR</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The Biotechnology and Ecology Institute is one of three research institutes in the technical research and services section of MOST. It is one of the main centres for the development of science and technology in Laos. The Institute is the national focal point for CITES convention and is also the Cartagena Protocol primary national focal point.</p> <p>The director general Dr Sundara is the principal collaborator and has been closely involved from the inception of this project, in the design and will be jointly responsible for monitoring and implementing the project. The involvement of Dr Sundara has ensured approval for the project at a senior level. His staff will form a key group of participants in the project.</p> <p>Evidence of the existing partnership is reflected in the enclosed copy of the letter of support. An MoU has been written and exchanged between the James Hutton Institute and BEI-MOST. Since this MoU deals specifically with the proposed project, it would be signed upon a successful outcome of this application.</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>Partner Name and website where available:</p> <p>National University of Lao PDR http://www.nuol.edu.la/index.php/en/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The National University of Lao PDR (NUoL) will assist with training venues and materials. Lecturers and students will be involved in training and field workshops.</p> <p>Dr Vichith Lamxay is head of post graduate affairs and well placed to support the project. He is a botanist who did his PhD in collaboration with RBGE.</p> <p>The NUoL will be responsible for housing the databases developed during the project and after the project terminates. The University has agreed to employ the MSc graduate upon their return to Laos.</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>Partner Name and website where available: Prof Urmas Kõljalg, University of Tartu, Estonia http://www.ut.ee/en http://www.botany.ut.ee/urmas.koljalg/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The University of Tartu, belongs to the upper 50% of the world's countries in all 22 fields of research specified in the Essential Science Indicators database. According to the ESI, the University of Tartu has reached the top 1% of the most-cited universities and scientific institutions in environmental sciences and ecology, clinical medicine, plant and animal science, and chemistry.</p> <p>Prof Urmas Kõljalg is a mycologist at the University of Tartu with a global reputation in systematics and computerised data basing of taxonomic and metadata of environmental samples. He readily agreed to partner this project and provided input into the proposed workshops. He will be responsible for guiding the development of the databases in the proposed project and in teaching a range of topics including database construction and current systematics.</p>	
<p>Have you included a Letter of Support from this institution?</p>		<p>Yes</p>

<p>Partner Name and website where available: Prof Mieke Verbeken, Ghent University, Belgium http://www.ugent.be/en http://www.ugent.be/en/phone-book/people?ugentid=801001091612</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Ghent University is one of the major universities in the Dutch-speaking region of Europe. It distinguishes itself as a socially committed and pluralistic university with an international perspective. The Biology Department plays a pivotal role in the education of biology students by offering courses in a wide range of biological disciplines, centred on Ecology, Evolution, Functional Biology and Biodiversity.</p> <p>Prof Mieke Verbeken is an outstanding mycologist, who is the world expert on one the groups of fungi that dominate in tropical ecosystems. Her research group has worked all over the world, including areas adjacent to Laos. Her inclusion in the project as a teacher is a huge asset and she will be providing the course participants with an excellent grounding in many different aspects of mycology.</p>	
<p>Have you included a Letter of Support from this institution?</p>		<p>Yes</p>

<p>Partner Name and website where available:</p> <p>Dr Manfred Binder Centraalbureau voor Schimmelcultures (CBS) Fungal Biodiversity Centre, Utrecht, NL http://www.cbs.knaw.nl/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The Centraalbureau voor Schimmelcultures (CBS) Fungal Biodiversity Centre - an institute of the Royal Netherlands Academy of Arts and Sciences and situated in Utrecht - maintains a world-renowned collection of living filamentous fungi, yeasts and bacteria.</p> <p>The Institute's research programs principally focus on the taxonomy and evolution of fungi as well as on functional aspects of fungal biology and ecology, increasingly making use of molecular and genomics approaches.</p> <p>Dr Manfred Binder is a globally recognised fungal systematist who studies the evolution of fungal groups in relation to their ecology. His work has pioneered many current ideas on the development of enzymatic systems in fungal groups. He has extensive experience in field work in many part of the world. He combines this with the ability to utilise and develop the latest analytical approaches to fungal sequence data. He is therefore an excellent collaborator to have teaching in the workshops.</p>
<p>Have you included a Letter of Support from this institution? Yes</p>	

<p>Partner Name and website where available:</p> <p>TABI: The Agro-Biodiversity Initiative, Lao PDR.</p> <p>www.tabi.la</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The Agrobiodiversity Initiative (TABI) is a long-term commitment by the Lao Government and the Swiss Agency for Development and Cooperation (SDC) that seeks to conserve, enhance, and manage the biological diversity found in northern Laotian farming landscapes in order to improve the livelihoods of upland farm families.</p> <p>Mr Chris Flint is the chief technical advisor and team leader for TABI. He has very extensive experience in Natural Resource Management and has been highly supportive of this project proposal. He is very keen to combine the infrastructure and capabilities within TABI with the fungal and plant expertise of the other project partners. He is committed to enhancing the long term sustainability of non-timber forest products. This year he initiated a preliminary survey of edible fungi collected in Laos (see summary in Q. 15b) and has freely shared the findings in the development of this application. Close collaboration with Mr Flint is hugely valuable to the project, not just in terms of matched funding but also with his long experience of working with the villagers in Laos.</p>
<p>Have you included a Letter of Support from this institution? no</p>	

Partner Name and website where available: Agrobiodiversity Project (ABP) Lao PDR Ministry of Agriculture and Forestry	Details (including roles and responsibilities and capacity to engage with the project): (max 200 words) <p>The GEF/UNDP/FAO Agrobiodiversity Project is under the Ministry of Agriculture and Forestry and funded by The Global Environment Facility through UNDP and FAO. The project works strategically with central government, local authorities, agribusiness sector, NGO, farmers, donors, other projects, and the general public to make biodiversity a key consideration in routine day-to-day decision making. The objective of the ABP is to provide farmers with the necessary incentives, capabilities and supporting institutional framework to conserve agrobiodiversity within farming systems of Lao PDR.</p> <p>Mr Ole Pedersen is chief technical advisor in the ABP. He has been proactive from the inception of this project, being involved in the initial scoping visit to Laos. He is an amateur mycologist and is therefore well aware of the issues relating to the identification and more importantly the potential consequences of misidentification of collected fungi for consumption.</p> <p>This year ABP instigated the first study of the highly prized Matsutake mushroom in Laos and obtained the first empirical data on the economic importance of this harvest to villagers in one area where the fungus grows.</p> <p>Mr Pedersen is very keen to collaborate with the project to further investigate the harvesting of Matsutake and other edible fungi in Laos.</p>
Have you included a Letter of Support from this institution?	yes

11. Have you provided CVs for the senior team including the Project Leader	Yes
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12. Problem the project is trying to address

Please describe the problem your project is trying to address. For example, what biodiversity and challenges will the project address? Why are they relevant, for whom? How did you identify these problems?

(Max 200 words)

Lao PDR is one of Asia's most forested countries and supports some of the richest biodiversity within the region. Fungi are pivotal organisms in forest ecosystems but in Lao their functions and diversity are virtually unknown: they are absent from the Laotian National Biodiversity Strategy to 2020. This is despite the fact that fungi are widely collected for consumption and constitute a major income source in some regions. At present, Lao is unable to: determine its national mycota (and therefore realise its commitments to the CBD); carry out mycological research, and manage fungi sustainably due to a lack of trained mycologists. A clear demand has been expressed by the Lao biological community for capacity building and training to fill this gap. The proposed project will address this demand using workshops, establishing national reference collections and introduce basic molecular facilities and skills. A public awareness programme will also be initiated to raise awareness concerning fungal poisonings. In collaboration with aid agencies, the ecological and economic importance of wild fungi harvesting will be assessed in selected areas, with a special case study made of the potential overexploitation threat to the highly-prized Matsutake mushroom.

13. Methodology

Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc.).

Outcomes	Methods/Approach	Roles/Responsibilities	Project Management
Trained Lao Mycologists	Annual workshops that get progressively more advanced combining theory, practical and applied.	Workshop logistics: Lead, MN, BEI, NUoL, appointed local Laotian assistant. Teaching: Lead, MN, see below for list of tutors.	Close liaison between Lead, MN NUoL and Laotian assistant. Gant charts with clear milestones Preplanning of teaching material critical – group sessions on Skype.
One Laotian student trained to MSc level in Biodiversity and Taxonomy	One student to enrol on MSc course in the Biodiversity and Taxonomy of Plants at RBGE, Edinburgh	Mentor in Edinburgh: MN. Supervisor for project on fungi: Lead	Regular meetings between student, MN and AT
Functional molecular lab facilities capable of generating quality DNA for fungal barcoding	Training given during theoretical and hand-on workshops. MSc student will complete molecular project with Lead.	Setting up lab logistics: Lead, MN, BEI, NUoL, appointed local Laotian assistant. Teaching: Lead, tutors especially MB. Trained MSc to take over on return.	Close liaison between Lead, NUoL, Laotian assistant and tutors
Data-based fungal reference collection –	Training given during workshops,	Logistics: Lead, MN, BEI, NUoL, Laotian	Close liaison between Lead, MN NUoL and Laotian

exsiccates and cultures	field excursions	assistant. Training: Lead, MN workshop teachers.	assistant.
An assessment of fungi poisonings	Interviews with doctors and hospitals.	Surveys: Lead, MN, TABI, ABP, Laotian assistant	Close liaison between Lead, MN aid agencies and Laotian assistant.
Increase in public awareness of fungal toxicity	Interviews with fungi sellers and buyers to assess knowledge. Posters, leaflets prepared with images of toxic fungi and distributed at markets.	Surveys, information distribution: Lead, MN, TABI, ABP, Laotian assistant	As above.
Database on ethnomycology, including names of fungi in Lao	Interviews with collectors, sellers and buyers. Detailed studies of taxa for sale at markets.	Surveys: Lead, MN, TABI, ABP, Laotian assistant, NAFRI	Meetings between lead, TABI, ABP and assistant to develop surveys, which will be carried out when lead is in the country.
A report on the importance of different fungal groups (saprotrophic versus forest dependent spp.) to the edible market	Data collected above in detailed studies of taxa for sale at markets will allow determination of fungal trophic group. High dependency on forest species will mean harvest is vulnerable to logging.	Surveys: Lead, MN, ABP, TABI, Laotian assistant	Managed as part of the above, with additional input from Laotian assistant when lead out of country.
A report on the harvesting of the Matsutake mushroom	Site visits and interviews with locals involved in harvesting	Surveys and reporting: Lead, MN, ABP, Laotian assistant	Managed through ABP and carried out as a case study when Lead and MN in country
A report on the impact of logging on mutualistic edible fungi in Laos	Vegetation surveys of logged and unlogged forest and determination of fungi on host roots using molecular methods	Sample collection: Lead, MN, ABP, Laotian assistant Analysis: Lead Reporting: Lead, MN, ABP	Meetings with all to identify sites and sampling strategies. Analysis and reporting administered by Lead

14. Change Expected

Detail what the expected changes this work will deliver. You should identify what will change and who will benefit.

- If you are applying for Defra funding this should specifically focus on the changes expected for biodiversity conservation and its sustainable use.
- If you are applying for DFID funding you should in addition refer to how the project will contribute to reducing poverty. Q19 provides more space for elaboration on this.

(Max 250 words)

Outcomes	Change expected	Beneficiaries
Trained Lao Mycologists.	Increased knowledge base including a mycologist at NUoL.	Lao NBSAP requires accelerating research in lesser known groups. Trained mycologists make this feasible. Increased national capacity to carry out research on fungi, including conservation needs, biotechnology. Broader curriculum at NUoL.
Data-based fungal reference collection.	Established curation skills and basis of a collection.	Researchers able to deposit collections within Laos and utilise referenced sources.
Database of Laotian fungi.	Currently there is no national inventory of fungi in Lao.	Increased ability to fulfil CBD commitments.
An assessment of fungi poisonings	Verification of poisonings highlights need for increased public awareness, which leads ultimately to fewer poisoning cases.	The general public. Public health system.
Database on ethnomycology.	Laotian and English Web-based database of fungi and their uses, with individual taxon datasheets.	Hospitals dealing with potential poisoning cases. Raised awareness of the social importance of fungi will aid conservation efforts.
A report on which fungal taxa are sold in markets.	Data available on which fungi are important as societal commodities.	Established protocols allow researchers to monitor long term trends in important fungal taxa.
A report on Matsutake harvesting.	Knowledge on harvesting techniques will determine if an education programme is required to safeguard the fungal populations.	Local Matsutake sellers will benefit through sustained utilisation and survival of the fungus.
A report on logging impacts on edible fungi in Laos.	Increased awareness of effects of logging on edible fungi production.	Bodies involved in maintaining non-timber forest products and fungal conservation.

15a. Is this a new initiative or a development of existing work (funded through any source)? Please give details (Max 200 words):

This is a new initiative prompted by concern expressed the Lao biological community over the lack of capacity to assess and safeguard the mycological diversity within the country.

15b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for 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:

There are two aid agencies (Agro-Biodiversity Project [ABP] and The Agrobiodiversity Initiative [TABI]) working in Laos who are very interested in assessing of the economic and social value of fungi as non-timber products to local peoples in Laos. In June 2013, TABI instigated a survey of fungi collected in the Chomphet District, Luang Prabang Province. Chris Flint, who is the Chief Technical Advisor for TABI, has expressed an urgent wish to collaborate with the proposed Darwin project in an effort to promote alternative development options and livelihoods in this district as a large area is currently under threat from proposed Hydro scheme developments. Ole Pederson, who is Chief Technical Advisor for ABP, is also very keen to collaborate with the proposed project. ABP carried out a preliminary survey of fungi collected for food and sale in five villages (some 600 households) in Phoukout District, Xieng Khouang Province. Eighty-five to 95% of the households picked fungi with the estimated monthly average income from sales ranging from 0.3-1.4 million kip (40-150 USD). This is equivalent to 1-3 months' salary for an industrial worker in Laos. This is the first available information on the economic importance of fungi for villagers and highlights the need for more widespread, detailed studies of the sustainability of collecting and the resilience of fungal communities and their habitats in Laos. The most important income earner in the ABP study was the Matsutake fungus, the collecting of which is selected as one of the case studies in the proposed project.

The two studies initiated by TABI and ABP are useful indicators of the potential scale of collecting. However, both agencies lack the necessary taxonomic skills to properly assess the diversity of the fungi sold. Hence the data cannot be used to infer the ecology of the fungi sold at markets to see if they are dependent on compatible forest trees and hence potentially vulnerable to logging operations. In addition, it is not possible to assess the edibility of the fungi without correct identification. A list of 53 species of fungi collected was prepared in the TABI survey. It seems clear that the names are primarily assigned by comparison with photographs in European literature and hence very likely to be incorrect given the unlikely occurrence of the taxa in Laos. **However, this list includes four taxa that are deadly poisonous and four that will result in severe reactions.** While it may be unlikely that the names are correct, if the collected fungi are sufficiently like the species the names actually refer to, then there seems a reasonable chance that they could also be toxic. This is exactly why mycological taxonomic expertise is urgently required in Laos.

Close collaboration with the aid agencies will be invaluable in the development of the proposed project.

15c. Are you applying for funding relating to the proposed project from other sources? Yes No

If yes, please give brief details including when you expect to hear the result. Please ensure you include the figures requested in the spreadsheet as Unconfirmed funding.

16. Value for money

Please describe why you consider your application to be good value for money including justification of why the measures you will adopt will secure value for money?

(Max 250 words)

The project will achieve value for money through tight financial management at the James Hutton Institute, constantly seeking the best available prices for all items of expenditure. The workshops will be excellent value for money since the participants will get high quality tuition from world leading mycological authorities. The tutors on the course have committed to the

project and are offering their knowledge for the costs of travel and subsistence. In addition, they plan to be in Laos for a period longer than the workshops collecting fungal materials which will be added to the proposed national collections. They will do this at their own expense. In addition to this, Prof Mieke Verbeke has indicated in her support letter that she would be able to supply a number of 'old' microscopes, which will be a great asset for the fungi lab.

Most case studies will be low cost as they utilise surveys and interviews. The exception to this is the assessment of logging impacts below ground, which involves next generation sequencing. This approach is taken because it allows massive amounts of sequence data to be generated from multiple (100x) of samples simultaneously. Hence it is very cost effective when dealing with the megadiversity of fungal communities.

The software used for teaching molecular analysis techniques are freeware.

Our Laotian counterparts will not be in a position to offer direct financial support but will contribute substantial in-kind resources (microscopes, training venues administrative support) which help to minimise the overall cost of the project.

17. Ethics

Outline your approach to meeting the Darwin Initiative's key principles for research ethics as outlined in the guidance notes.

(Max 300 words)

Access to microbial genetic resources (MGRs) is considered integral to world-wide sustainable development. As part of this access it is vital to monitor the transfer of MGRs and identify those entitled to be scientifically or financially rewarded for their contribution to the acquisition, conservation and sustainable use of the MGRs. It is the intention of the proposed project to enable Laotian trained personnel to isolate and culture fungi. This will create the potential for biotechnological utilisation of the cultures. A vital component of this development will be to have in place mechanisms to support transfer of cultures to interested parties. MOSAICC – Microorganisms Sustainable use and Access Regulation International Code of Conduct – is a tool recognised by the CBD to support the implementation of the CBD at the microbial level (<http://bccm.belspo.be/projects/mosaicc/index.php>). MOSAICC was developed to 'facilitate access to MGRs and to help partners to make appropriate agreements when transferring MGRs, in the framework of the CBD and other applicable rules of international and national laws'. The system proposed by MOSAICC involves two operating principles; a Prior Informed Consent (PIC) procedure which authorises in situ sampling, and a Material Transfer Agreement (MTA). As part of the development of the culture collection, a process to initiate a PIC and a MTA will be instigated to establish the protocol thus facilitating any future requests.

Assessing the impact of logging on fungi will involve taking soil samples for processing within country and subsequent transfer of dried root material for processing in the UK. Although verbal agreement has already been granted for this, a formal PIC and MTA will also be obtained for this case study.

Case study ethics

The case study of potential poisoning cases will be made through medical personnel and establishments. No direct contact will be initiated with any person directly involved.

18. Legacy

Please describe what you expect will change as a result of this project with regards to biodiversity conservation/sustainable use and poverty alleviation (for DFID funded projects). For example, what will be the long term benefits (particularly for biodiversity and poor people) of the project in the host country or region and have you identified any potential problems to achieving these benefits?

(Max 300 words)

The project will create a pool of trained personnel with fungal taxonomic and field and laboratory mycological skills. These will be transferable skills, particularly for the student trained

to MSc level, who will have a University of Laos position, a basic molecular lab and teach mycology. Other trainees will have the skills necessary to lead and participate in other fungal inventory projects that will be required as the Lao PDR develops its natural resources. Publicly accessible information and publications generated by this project will be available in Lao PDR as well as internationally, promoting the importance of this area within the region and internationally. This project will catalyse further biodiversity conservation projects. Raising awareness of potential fungal poisoning will have a long term impact by reducing the hardship and social disruption brought about by this issue.

At present, the diversity of fungi in Laos is unknown but it is clear that they are a major source of food and income in many areas. It is not possible to assess if this is sustainable due to lack of trained personnel. The project will form the foundation for monitoring the utilisation and the long term protection of these organisms.

Good relations between the project leader and tutors, their combined extensive taxonomic training and field-work experience will ensure that the workshops will be very high quality. A strong focus on practical skills will be given as theoretical knowledge is easier to gain privately. The appointment of a local assistant will facilitate project logistics enhancing impact. The linguistic skills of MN and his expert knowledge of the Lao flora will also greatly facilitate the success of the surveys and case studies. The frequent meetings planned for the project steering committee will also ensure that any problems that do arise can be dealt with promptly.

19. Pathway to poverty alleviation

Please describe how your project will benefit poor people living in low-income countries. All projects funded through DFID in Round 20 must be compliant with the OECD Overseas Development Assistance criteria. Projects are therefore required to indicate how they will have a positive impact on poverty alleviation in low-income countries.

(Max 300 words)

In Lao PDR, more than 75% of the population depend on the sustainable use of biodiversity. Sustainable management and the longer term protection of people's livelihoods depend on accurate identification and documentation of that biodiversity. Training and institutional capacity building at a national level is essential if this is to be achieved - this project will make a significant contribution to that objective.

The project will have a number of more readily identifiable positive impacts on the livelihoods of people in Laos in both the intermediate and long term. The harvesters and consumers of market bought fungi will benefit from the raised awareness of the potential for fungal poisoning by a reduction in the hardship and social disruption brought about by this issue. The harvesters will benefit in the long term from the findings of the investigation into the impact of logging on edible fungi. Many of the edible fungi are dependent on a particular group of forest trees and if these are removed, there will be no harvest. The findings of this study will be made aware to government agencies involved in safeguarding non-timber forest products. Similarly, the highly-prized Matsutake mushroom is dependent upon pine trees and its survival is dependent on both the survival of the host tree and on harvesting techniques. The case study of Matsutake will determine if harvesters are aware of these issues and if there is a need to raise an education programme to increase awareness amongst harvesters of the susceptibility of Matsutake to improper harvesting approaches, thereby safeguarding their livelihoods.

In the longer term, raising the awareness of the essential roles of fungi in ecosystems will help to secure the long term ecosystem services they provide in the Laotian forests, thereby sustaining the livelihoods of forest product harvesters.

20. Exit strategy

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)

The main outcome of the project is to raise academic and technical capacity in Laos PDR to carry out fundamental mycological research thereby contributing to safeguarding harvesters, consumers and the national fungal capital. The project is therefore a foundation stone in a progressive approach in environmental education and conservation.

Part of the strategy is analogous to 'training trainers' with a focus on intensive education of a small number of trainees who can then utilise their acquired knowledge to teach others, transfer identification skills for field or market surveys for government agencies, or utilise their knowledge in mycological research for biotechnology applications.

The University of Laos has agreed that the MSc graduate will be employed as a mycologist as member of staff as a mycologist. This will broaden the curriculum and secure the benefit of the project for future students. Laboratory capital equipment and consumables will remain with in-country partners after the project and will enable continued research. Mechanisms for ongoing financing of consumables will be established with in-country partners. Suitable personnel from BEI-MOST and the University of Laos will be included as workshop trainees to ensure continuity of skills in the event of staff changes.

21. Raising awareness of the potential worth of biodiversity

If your project contains an element of communications, knowledge sharing and/or dissemination please provide a description of your intended audience, how you intend to engage them, what the expected products/materials there will be and what you expect to achieve as a result. For example, are you expecting to directly influence policy in your host country or is your project a community advocacy project to support better management of biodiversity?

(Max 300 words)

There appears to be astonishingly little awareness in Laos of the importance of fungi in ecosystems and their potential fragility even though they are major non-timber forest products. Raising this awareness and the need for careful management across a broad range of audiences is a fundamental goal of the project.

The workshop participants and MSc student represent a small core audience with the greatest long-term potential to raise awareness of the importance of sustainable utilisation of fungi.

As part of the Ethnomycology database, a website in English and Lao will be established containing general information about fungi, their varied roles in nature and their conservation. The design will be based on the very successful website for Scottish fungi (<https://sites.google.com/site/scottishfungi/>) using freeware from Google. The project lead and the Laos assistant will set this up. The webpage will have links to and from other websites with further information on conservation and fungi. The Facebook link in the Scottish website has proved popular and is effective in disseminating and communicating information and attracting new viewers, and will be trialled within the project.

The survey of the harvesting of Matsutake will provide evidence of both the methods employed and the level of knowledge of the harvesters. This information will greatly assist both foreign aid and government agencies in determining if there is a need to raise an education programme to increase awareness amongst harvesters of the susceptibility of Matsutake to improper harvesting approaches.

Britain recently opened an Embassy in Vientiane after an absence of 27 years. They are aware of the project and Alex Needham, Deputy Head of Mission, has offered her support in raising the profile of the project. This exposure could potentially reach a diffuse range of audiences that would otherwise be missed.

22. Access to project information

Please describe the project's open access plan and detail any specific costs you are seeking from Darwin to fund this. (See Section 9 of the Guidance Notes for further information)

(Max 250 words)

All manuals, seminar materials and case study reports will be available as hardcopies at partner Institutes and as PDF downloadable files from the project website. Regular updates on the project will also be posted on the website. The cost of webpage development assistance at the James Hutton Institute is included in the costing.

Executive summaries of case study reports will be translated into Lao. Translation tasks will be carried out by the project's local assistant.

A number of datasets will be generated including fungal collections, ethnomycological data and fungal sequences. Responsibility for data quality checks will ultimately lie with project lead, partners and tutors who ensure that these are implemented. Datasets will be public access. In addition to storage in Laos, all data will be archived using the secure electronic data archiving service of the James Hutton Institute, which is backed-up nightly. Backups are stored on disk and tape. Tapes are stored in fireproof safes that only limited members of staff have access to. The live data, backup system with local disk, and fireproof safes storing tapes are all sited in different locations.

Generated fungal sequences will be deposited in Genbank. Full length ITS fungal sequences will also be deposited in UNITE (unite.ut.ee/index.php). The raw NGS data from the logged study will be submitted to ENA Sequence Read Archive (SRA, http://www.ebi.ac.uk/ena/about/sra_submissions). The original and one photocopy of all field notebooks and other hard copy materials will be archived in separate locations to mitigate the potential impact of loss through fire or theft.

23. Importance of subject focus for this project

If your project is working on an area of biodiversity or biodiversity-development linkages that has had limited attention (both in the Darwin Initiative portfolio and in conservation in general) please give details.

(Max 250 words)

Fungi are integral components of all terrestrial and freshwater ecosystems. They are the recyclers of organic material, key obligate symbionts in 95% of terrestrial plants and potentially devastating animal and plant pathogens. There are an estimated 1.5 million species of fungi. However, despite their obvious diversity and accepted roles in the environment, these organisms have been almost totally overlooked by the conservation movement in general and the Rio Convention on Biological Diversity [CBD] in particular. This situation is changing slowly and there are now (since 2009), a total of five specialist groups for fungi under the Species Survival Commission of the IUCN. In addition, the International Society for Fungal Conservation (<http://www.fungal-conservation.org/>) was founded in 2010 to promote conservation of fungi.

There is still a widely held belief that fungi are plants and thus are frequently included within this kingdom and consequently any conservation legislation, projects, or movements involving plants are assumed to include fungi. Education to raise awareness of fungi as separate organisms with unique characteristics and conservation needs is essential to alter this perception. The Laotian National Biodiversity Strategy to 2020 (<http://www.cbd.int/doc/world/la/la-nbsap-01-en.pdf>), like that of many other countries only mentions fungi briefly (if at all) and they are confused with plants. The preparation of these strategies is part of the Laotian commitment to the CBD. This project will provide both trained personnel with the knowledge to contribute to the strategy and it will also raise the awareness of the much neglected but essential group of organisms.

24. Leverage

a) Secured

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity.

Confirmed:

The Institute will cover the short fall (£14, 446) between permitted overheads and the salary overheads of personnel working for Institute. The tutors are offering their services on the workshops for only the cost of travel and subsistence, i.e. they do not require a daily rate. Over the period of the project this amounts to £75,000

The two aid agencies are willing to match fund significant amounts towards the project. TABI will be committing \$35-40,000 US dollars (av. £21,000) to fungal project per annum over the next 3 years. ABP figures are currently not known.

b) Unsecured

Provide details of any matched funding where an application has been submitted, or that you intend applying for during the course of the project. This could include matched funding from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor organisation	Amount	Comments

PROJECT MONITORING AND EVALUATION

MEASURING IMPACT

25. LOGICAL FRAMEWORK

Darwin projects will be required to report against their progress towards their expected outputs and outcomes if funded. This section sets out the expected outputs and outcomes of your project, how you expect to measure progress against these and how we can verify this. Further detail is provided in Annex C of the guidance notes which you are encouraged to refer to. The information provided here will be transposed into a logframe should your project be successful in gaining funding from the Darwin Initiative. The use of the logframe is sometimes described in terms of the Logical Framework Approach, which is about applying clear, logical thought when seeking to tackle the complex and ever-changing challenges of poverty and need. In other words, it is about sensible planning.

Impact

The Impact is not intended to be achieved solely by the project. This is a higher-level situation that the project will contribute towards achieving. All Darwin projects are expected to contribute to poverty alleviation and sustainable use of biodiversity and its products.

(Max 30 words)

To enable Laos PDR to manage its mycological resources and fulfil CBD commitments through increasing awareness of fungi, their conservation, economic sustainability, and ecological importance.

Outcome

There can only be one Outcome for the project. The Outcome should identify what will change, and who will benefit. The Outcome should refer to how the project will contribute to reducing poverty and contribute to the sustainable use/conservation of biodiversity and its products. This should be a summary statement derived from the answer given to question 14.

(Max 30 words)

There will be an increased academic and technical capacity in Laos PDR to carry out fundamental mycological research thereby contributing to safeguarding harvesters, consumers and the national fungal capital.

Measuring outcomes - indicators

Provide detail of what you will measure to assess your progress towards achieving this outcome. You should also be able to state what the change you expect to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure the outcome – if you have more than 3 indicators please just insert a row(s).

Indicator 1	Knowledge assessments will be made as part of the workshops. Present baseline = no knowledge of fungi. Post workshops the participants should have a good basic theoretical and practical knowledge of traditional and molecular fungal taxonomy, conservation, and ecology. One graduate trained to MSc level.
Indicator 2	Present baseline = no fungal reference material, little literature or knowledge of ethnomycology - vernacular names and uses. Post project: Representative reference collections made of fungi for sale in markets and of fungi collected during workshops. Each collection associated with a fact sheet and photos in web-accessible database.
Indicator 3	Currently only word of mouth reports exist of poisonings due to fungi.

	Documented cases will be compiled. Increased awareness of potential toxicity being the desired end state.
Indicator 4	Currently there is no knowledge of the impact of logging or of harvesting techniques on sustainable utilisation of edible fungi associated with forest trees in Laos. Case studies will provide this data.

Verifying outcomes

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

Indicator 1	Assessments will take the form of short practical and written exams. Workshop satisfaction surveys will be given out to all participants and analysed. One student with a MSc degree in Biodiversity and Conservation.
Indicator 2	The project leader and tutors will inspect all reference collections to ensure agreed quality standards, including fact sheets and photos. Project leader and local Project Steering Committee will be responsible for ensuring online access is created and fully functional.
Indicator 3	Project leader, the local assistant and aid agencies will ensure proper use of standard reporting forms in data acquisition from medical establishments and will also make sure the storage/filing of these records takes place in these establishments. Verification of awareness of both buyers and sellers will be established using market surveys carried out by project leader, local assistant and aid agencies. Project leader will ensure consistency of approach and analysis of findings.
Indicator 4	Quality of survey data on logging impacts will be ensured as project leader is directly involved in collecting it. The quality and consistency of household and field surveys of fungi harvesters will be ensured by the project leader overseeing all the work.

Outcome risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the *outcome and impact* of the project. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

Assumption 1	There is an assumption that there will be 10-15 participants who will benefit and value participation in the workshops. The level of spoken English may be an issue and a translator may have to be employed. That it will be possible to transport and maintain <i>in situ</i> the equipment required for the workshops and new lab. That the international experts who have already agreed to participate will actually be available or will find alternatives.
Assumption 2	One student must have sufficient English and skills in order to qualify for inclusion on the MSc programme in Edinburgh.
Assumption 3	That there will be fungal fruit body material to gather and process for inclusion within the national mycological collection. That conditions can be maintained where dried fungal collections can be kept free from insect attack.
Assumption 4	That it is possible to obtain information regarding fungal poisoning cases from hospitals and doctors.
Assumption 5	There is an assumption that accessible suitable logged and unlogged areas can be found in which to do the analyses. The participation of the villagers in surveying local knowledge and harvesting techniques for Matsutake is critical for the case study.

Outputs

Outputs are the specific, direct deliverables of the project. These will provide the conditions necessary to achieve the Outcome. The logic of the chain from Output to Outcome therefore needs to be clear. If you have more than 3 outputs insert a row(s). It is advised to have less than 6 outputs since this level of detail can be provided at the activity level.

Output 1	Mycological training workshops involving international experts training national participants. Establishment of databases.
Output 2	A functional molecular laboratory supported by training manuals and SOPs for processing and establishing mycological collections from material collected locally and nationally.
Output 3	Report on poisonous fungi and poisonings collected from markets and medical establishment.
Output 4	Report on the fungi sold at markets, including ecological data.
Output 5	Data generated from molecular study of fungal communities in logged and unlogged areas, analysed and written up.
Output 6	Data collected from interviews with local villagers involved in harvesting Matsutake, processed and written up.

Measuring outputs

Provide detail of what you will measure to assess your progress towards achieving these outputs. You should also be able to state what the change you expect to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure each output – if you have more than 3 indicators please just insert a row(s).

Output 1	
Indicator 1	Measure = Workshops taking place and attract the required participants
Indicator 2	Expected change: 10-15 participants trained (previously 0)

Output 2	
Indicator 1	Measure = development of a dedicated facility for preparation of fungal DNA.
Indicator 2	Training manuals and SOPs - project leader and tutors will correspond monthly to ensure progress on track
Indicator 3	Local collections will be checked by project leader (and tutors) 3x per year to ensure satisfactory progress. Expected change: existence of manuals and collections not previously available.

Output 3	
Indicator 1	Report will be compiled by project leader, TABI and ABP – progress will be checked 3x per year. Expected change: empirical data on quantification of severity and frequency of this issue, not previously available and critical for addressing this in the future

Output 4	
Indicator 1	Report will be compiled by project leader, TABI and ABP – progress will be checked 3x per year. Expected change: There is currently little empirical data on the diversity of fungi sold at markets and no information on their ecology. The report will provide this, enabling future comparative assessments.
Output 5	
Indicator 1	Report will be compiled by project leader to ensure quality control and timeliness. Progress will be reported regularly to project steering committee. Expected change: There is no data or awareness within Laos on how logging impacts on edible fungi, the report will redress this deficit.

Output 6	
Indicator 1	Report will be compiled by project leader, TABI and ABP progress will be checked once a year at the end of the fruiting season of Matsutake. Expected change: currently little information available on scale of harvesting, none of harvesting approaches or local knowledge. The study will provide this information to assess if harvesting approaches appear sustainable.

Verifying outputs

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

Indicator 1	Market surveys, household surveys, project notes
Indicator 2	Publications on logging impacts, Matsutake harvesting
Indicator 3	Report on fungal poisoning in Laos, Report on the diversity of marketed fungi in Laos

Output risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the achievement of your outputs. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

Assumption 1	There is a risk that insufficient suitable participants may be found for the workshops and that they can be taught over the three consecutive years. This may be countered by having a number of BEI and NUoL employees as participants.
Assumption 2	There is a risk that there may be poor fruiting years during the period covered by the project, which could significantly impact on the number of collections and observations that can be made. However, the seasonality experienced in Laos is much more dependable than the vagaries of the temperate zones.
Assumption 3	There is an assumption that the infrastructure within Laos remains stable during the period of the project and beyond. Shifts in policy or personnel could impact upon the project outputs.

Activities

Define the tasks to be undertaken by the research team to produce the outputs. Activities should be designed in a way that their completion should be sufficient and indicators should not be necessary. Risks and assumptions should also be taken into account during project design.

Output 1	
Activity 1.1	Setting up the logistics for the workshops. Recruiting participants for the workshops from BEI and NUoL and other interested parties.
Activity 1.2	Run three workshops, including field excursions and lab practical sessions.
Activity 1.3	Finding suitable servers, hardware and software for initiating and developing of databases

Output 2	
Activity 2.1	Identifying a secure, suitable location within BEI or NUoL to house the fungal laboratory. Acquiring the suitable consumables and equipment for the lab.
Activity 2.2	Liaising with other tutors for the development of the necessary manuals for the workshops
Activity 2.3	Preparing manuals for each workshop

Output 3	
Activity 3.1	Contacting medical establishments for cases of confirmed or suspected fungal poisonings. Checking newspapers for poisoning articles. Interviewing traders.
Activity 3.2	Checking and collating the data
Activity 3.3	Preparing the final report in conjunction with TABI and ABP

Output 4	
Activity 4.1	Working with TABI and ABP on gathering data from different markets to establish the diversity and identity of fungi sold. Local Laotian project assistant to participate in this.
Activity 4.2	This will be done during the May-August season each year with yearly reports prepared
Activity 4.3	The final report will be compiled with TABI and ABP

Output 5	
Activity 5.1	Suitable logged and unlogged sites will be identified in collaboration with TABI and ABP. The impact on the above ground tree vegetation will be assessed. Root samples will be taken and dried for shipping to the James Hutton Institute.
Activity 5.2	Samples will be extracted and processed for high throughput sequencing. Data will be analysis and community analyses carried out.
Activity 5.3	A report will be prepared and a scientific paper produced for publication.

Output 6	
Activity 6.1	Suitable areas producing Matsutake will be identified in collaboration with TABI and ABP. Observations will be made of harvesting techniques and interviews will be carried out with the harvesters.
Activity 6.2	Data will be collated from different areas to identify potential differences in knowledge and harvesting approaches
Activity 6.3	A final report will be prepared in conjunction with TABI and ABP

27. Project based monitoring and evaluation (M&E)

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the projects M&E. Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

(Max 500 words)

A Project Steering Committee will be established at the outset of the project and will consist of representatives from all partners. An early obligation of the Project Steering Committee will be to establish a monitoring and evaluation plan for the project that incorporates the logical framework indicators. The M&E and reporting procedures are designed to show delivery of **outputs** (as per the indicators in the Logical Framework) and fulfil government and Darwin Initiative reporting requirements in four main ways:

First, quarterly and annual reports will describe and account for (i) actual implementation in comparison with the project log-frame, action plan and budgets, and (ii) data on indicator status and trends.

Second, the Project Steering Committee will meet twice yearly to review the monitoring outputs and examine progress towards meeting the project purpose and goals. Changes will be reflected in annual action plans and budgets.

Third, the UK Project Leader (A. Taylor) and Laos Project assistant (to be recruited) will maintain regular contact with each other (by email and telephone) and with other project partners and exchange monthly reports while he or she is employed. The reports will outline activities undertaken and progress towards outputs using the indicators in the Logical Framework. The in-country Project Principals under BEI-MOST (Dr Sundara), TABI (Chris Flint), ABP (Ole Pedersen) and NUoI (Dr V Lamxay) will also provide technical support to the Laos project assistant. The UK Project partners (AT and MN) will also make three and two yearly visits, respectively, to Laos to support, monitor and evaluate project progress and attend PSC meetings.

Fourth, in addition to these internal assessments an external evaluation will be carried out 6 months before the end of the project. This will allow the final evaluation to inform the need for possible follow-up activities and consolidation by the partners. It will be carried out by an appropriately experienced expert.

FUNDING AND BUDGET

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

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. Budgets submitted in other currencies will not be accepted. Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

28. Value for Money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

(max 300 words)

The James Hutton Institute has an auditable methodology for fEC. The budget has been calculated based on actual anticipated time spent on the project. Our consumables and other direct costs have been accumulated through discussion with the partners and current knowledge of travel costs etc. The assumption here is that the prices of consumables may vary on completion of the project due to variance between UK and Laos prices. Our current prices for salaries assume a progression of 3% per annum as per guidance above.

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 your Foreign Ministry or the local embassy or High Commission (or equivalent) directly to discuss security issues (see Guidance Notes) and attach details of any advice you have received from them.

Yes (no written advice) Yes, advice attached No

CERTIFICATION

On behalf of the company of **The James Hutton Institute**
(*delete as appropriate)

I apply for a grant of £ 243,619 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates 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 applicant institution to submit applications and sign contracts on their behalf.)

- I enclose CVs for project principals and letters of support.
- Our most recent audited/independently verified accounts and annual report are also enclosed/can be found at:

Name (block capitals)	PROFESSOR ROBERT FERRIER
Position in the organisation	DIRECTOR OF RESEARCH IMPACT

Signed



Date:

2 DECEMBER 2013

Stage 2 Application - Checklist for submission

	Check
Have you read the Guidance Notes ?	√
Have you provided actual start and end dates for your project?	√
Have you indicated whether you are applying for DFID or Defra funding. NB: you cannot apply for both	√
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	√
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?	√
Has your application been signed by a suitably authorised individual? (clear electronic or scanned signatures are acceptable in the email)	√
Have you included a 1 page CV for all the Principals identified at Question 7?	√
Have you included a letter of support from the <u>main</u> partner(s) organisations identified at Question 10?	√
Have you been in contact with the FCO in the project country/ies and have you included any evidence of this?	√
Have you included a copy of the last 2 years annual report and accounts for the lead organisation? An electronic link to a website is acceptable.	√
Have you checked the Darwin website immediately prior to submission to ensure there are no late updates?	√

Once you have answered the questions above, please submit the application, not later than midnight GMT on Monday 2 December 2013 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**. 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). You are not required to send a hard copy.

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.