



DARWIN200

17-006

Submit by Monday 1 December 2008

### DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 16: STAGE 2

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

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

<b>Name:</b> School of the Environment and Natural Resources, Bangor University	<b>Address:</b> Thoday Building, Deniol Road, LL55 2UW, Wales, UK
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**2. Project title (not exceeding 10 words)**

Bushmeat hunting in Madagascar: linking science, policy and local livelihoods

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

<b>Proposed start date: 1 April 2009</b>		<b>Duration of project: 3 years</b>			<b>End date: 31 March 2012</b>
<b>Darwin funding requested</b>	<b>2009/10</b> £87,275	<b>2010/11</b> £105,757	<b>2011/2012</b> £106,443	<b>2012/13</b> £	<b>Total</b> £299,475

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

Improved capacity within Madagascar, in terms of scientific and socio-economic understanding, applied to improving the management of harvested endemic species.

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

Details	Project Leader	Other UK personnel (working more than 50% of their time on project)	Main project partner and co-ordinator in host country/ies
<b>Surname</b>	Jones	Jenkins	Razafimanahaka
<b>Forename (s)</b>	Julia	Richard	Julie
<b>Post held</b>	Lecturer in Conservation	Research Fellow	Programme Manager
<b>Institution (if different to above)</b>	Bangor University	University of Aberdeen (until 31 March 2009)	Madagasikara Voakajy
<b>Department</b>	School of the Environment and Natural Resources	School of Biological Sciences	
<b>Telephone</b>			
<b>Email</b>			

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

Reference No	Project Leader	Title
EIDPR088	Fergus Sinclair	Integrating local and scientific knowledge in conservation management in Nicaragua
12020	Lorraine Gormley	Building Nicaraguan and Costa Rican capacity in biodiversity conservation
EIDPJ007	Morag McDonald	In situ conservation of indigenous tree species in Southern Cameroon
10031	Zewge Teklehaimanot	Biodiversity conservation in ancient church and monastery yards in Ethiopia
3064	John Healey	The effect of an invasive tree species on biodiversity in primary montane rainforests in Jamaica
3063	John Healey	Tree regeneration, vegetation dynamics and the maintenance of biodiversity in Mount Cameroon

**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)**

<b>Aims (50 words)</b>
<b>Activities (50 words)</b>
<b>Achievements (50 words)</b>

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

<b>Partner Name: Madagasikara Voakajy (MV)</b>	<b>Details (including roles and responsibilities and capacity to engage with the project):</b> This Malagasy organisation identified the need for this project and approached Dr Julia Jones (BU) for technical input. MV employs 12 scientists and conducts a range of conservation and education projects. Madagasikara Voakajy focuses on sustainability and sustainable use of Madagascar's unique natural resources. As the principal host-country partner, MV will manage the running of the project in Madagascar from its office in Antananarivo, supported by the UK partner. <b>Julie Razafimanahaka</b> will lead the team in Madagascar and be supported by Andrinajoro Rakotoarivelo, Felicien Randriandriananina and Daudet Andriafidison and her responsibilities will include coordination of project partners, stakeholders, fund raising and management of the student training programme. Julie has just completed a masters at UEA funded on a Darwin scholarship.
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<p><b>Partner Name:</b>  <b>Department of Water and Forests, Ecole Supérieure des Sciences Agronomiques (ESSA-Forêt), University of Antananarivo</b></p>	<p><b>Details (including roles and responsibilities and capacity to engage with the project):</b>  This academic department offers the equivalent of undergraduate degrees, masters degrees and PhDs concentrating on the sustainable exploitation and wise management of the natural environment in Madagascar. The training they provide is aligned with the needs of the Malagasy government to the extent that many of its graduates are recruited by the Ministry of Environment, Forests and Tourism. Students from this department will participate in professional training placements which will consist of undergraduates shadowing key project people. Masters students will carry out their dissertation research as part of this project, co-supervised by Madagasikara Voakajy and Bangor University. The head of department, <b>Dr Bruno Ramamonjisoa</b>, is the focal point from this organisation and has a long established working relationship with both Julia Jones and Richard Jenkins. He has been involved in planning the training element of this project from the start.</p>
<p><b>Partner Name:</b>  <b>Ministry of the Environment, Forests and Tourism</b></p>	<p><b>Details (including roles and responsibilities and capacity to engage with the project):</b>  Our project will work closely with the Ministry of the Environment, Forests and Tourism. The Department for the Valorisation of Natural Resources is the department most closely involved in our work (although staff in the Department of Protected Areas have also been involved in planning discussions and are very supportive). <b>Vololoniaina Rakotondrabanja</b> runs the department and has been discussing this project with us since 2007. She identifies a real need for the research outlined here. Mme Rakotondrabanja will facilitate cooperation with regional ministry staff as well as ensuring that key leaders, including the minister, are kept informed about project progress. The ministry are very keen to use the results of the research to inform their policy with respect to legal and illegal bushmeat hunting.</p>
<p><b>Partner Name:</b>  <b>Institute Pasteur, Antananarivo</b></p>	<p><b>Details (including roles and responsibilities and capacity to engage with the project):</b>  Institute Pasteur is concerned with human health and diseases and operates a large project in Madagascar with state of the art laboratories and skilled technicians. During this project, the Institute Pasteur will train Madagasikara Voakajy staff in collection procedures and analyse the fruit bat samples collected. <b>Dr Jean-Marc Reynes</b>, Head of Virology have been collaborating with MV since 2007.</p>
<p><b>Partner Name:</b>  <b>Conservation International, Madagascar</b></p>	<p><b>Details (including roles and responsibilities and capacity to engage with the project):</b>  Conservation International is a global biodiversity NGO with a large country programme in Madagascar. They consider bushmeat exploitation to be a priority issue and are very keen to work with us. The Madagascar office is managing the creation of new protected areas, two of which we have identified as suitable study sites. Julia Jones and Richard Jenkins met <b>Dr James Mackinnon</b>, technical director, in 2007 to discuss the possibility of matched funding. They have already committed to funding some field activities via MV in the first year and if all goes well will provide funding throughout the project.</p>

<p><b>9a. Have you consulted stakeholders not already mentioned above?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>If yes, please give details:</b></p> <p>We have discussed the project with the community association Association Mbarakaly in Moramanga region. They are interested in exploring the efficacy of traditional management of bat roosts in their area with the view to getting local laws (<i>dinas</i>) recognised formally. We have also discussed this project with other conservation NGOs in Madagascar.</p>
<p><b>9b. Do you intend to consult other stakeholders?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>If yes, please give details:</b></p> <p>Regional stakeholders including traditional and governmental authorities will be consulted if we are awarded the grant.</p>
<p><b>9c. Have you had any (other) contact with the government not already stated?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><b>If yes, please give details:</b></p>
<p><b>9d. Is any liaison proposed with the CBD/CMS/CITES focal point in the host country?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>If yes, please give details:</b></p> <p>Our project has the support of the Ministry of the Environment, Forests and Tourism (see supporting letter signed by the minister), the ministry responsible for the implementation of the CBD. Although we have not directly discussed the project with <b>Laurette Rasoavahiny</b>, the CBD focal point, our contacts in the Department of the Valorisation of Natural Resources and the Department of Protected Areas have discussed the project her and we have worked with her in the past. If the grant is awarded she will be invited to assist in the project planning, implementation and evaluation.</p>

## PROJECT DETAILS

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

Wild animals (bushmeat) are harvested for food by people across the world and form an important component of local livelihoods. However, there are numerous risks and conflicts associated with this exploitation. Madagascar has incredible wealth in biodiversity but this is under threat from the pressures of its poor, rural population. Hunting is widespread and provides an important source of protein and income for rural people. In 2006 the government published a classification of terrestrial vertebrates into protected, semi-protected (hunting permitted with authorization), game (hunting permitted in season) and pest (hunting encouraged) species. However, it is still common for protected species to be hunted, posing a serious threat to a number of them (particularly diurnal lemurs). The exploitation of game species (including tenrecs, bats, wildfowl and edible frogs), has received very little attention, although it is certainly much wider in extent. Alongside government-imposed rules, there are complex informal institutions concerning exploitation of wild species including traditional taboos (*fady*) and locally agreed rules (*dina*), many of which are based on extensive local knowledge.

A lack of information is currently the most significant impediment to better management of bushmeat hunting in Madagascar. The Malagasy government is concerned about hunting of protected species but also that the lack of attention given to game species means that species may have been incorrectly classified, closed seasons may not have been correctly identified, and the risks of disease transfer to humans not been properly considered. The classification of species and the rules concerning the hunting of wild species are not well known, even among regional forestry service officials, meaning that there is widespread confusion about what can and cannot be hunted. The challenge is to manage wild hunting in Madagascar in line with the national strategic plan (Madagascar Action Plan) and the CBD while incorporating traditional knowledge and traditions concerning exploitation of hunted species. This project is needed to (1) carry out fundamental research on the drivers of bushmeat hunting, the sustainability of existing harvests, traditional management and knowledge of hunting rules and the risks to peoples' health from consuming bushmeat (2) train promising scientists and conservationists in the skills needed to research these issues, (3) build capacity among Malagasy conservationists to develop institutions to promote sustainable management, (4) engage with stakeholders including regional and national government to review existing legislation on wild hunting and the strategy of communicating these rules to the public. This project will therefore help Madagascar contribute to the CBD 2010 biodiversity targets (2.1, 2.2, 4.1, 4.2, 8.1, 8.2, 9.1, 9.2) as well as CBD articles 7, 10, 12, 13 and the Island Biodiversity theme. We take an ecosystem approach, recognising that humans with their

cultural diversity represent an integral part of an ecosystem.

#### Proposed Strategy

Bangor University (BU) will partner Madagasikara Voakajy (MV) and Ecole Supérieure des Sciences Agronomiques, Département des Eaux et Forêt, University of Antananarivo (ESSA-Forêt) to implement this project which has four main elements: research, training, capacity building and stakeholder engagement. Field work will take place in the Menabe Region in the west and the Alaotra Mangoro Region in the east, in dry deciduous and humid forest respectively. Workshops to finalise the work plan and disseminate results will be held locally, regionally and nationally and the project expects to have direct impacts at the site (district) level and at the regional and national level.

#### Project Outcomes

- 1) A review of vertebrate species that are listed as game under Malagasy law with respect to their distribution, biology, IUCN Red List status and the extent to which they are hunted;
- 2) An understanding of the factors that influence patterns of exploitation, focusing on governance (e.g. national legislation and traditional rules), socio-economic (e.g. cost, taste preference) and biological (e.g. availability, fattiness) factors;
- 3) An assessment of the impact of hunting of game species that make important contributions to rural livelihoods (e.g. wildfowl, bats, tenrecs), to assess whether exploitation is, or could be, sustainable;
- 4) Recommendations for revisions to national legislation prepared with the Malagasy government;
- 5) An assessment of the knowledge of rules concerning hunting of wild species among relevant groups;
- 6) Greater protection for traditional knowledge and practices with locally endorsed recommendations prepared to improve sustainable management of priority taxa;
- 7) Analysis of the risk of disease transfer from humans eating bats (e.g. Nipah and Corona viruses);
- 8) Malagasy masters students (five in total) graduated (Diplôme d'Etude Approfondies) and trained in the skills needed to undertake applied research in conservation science. Undergraduate students undertaking work experience with MV.

#### Partner contributions

The UK partner (BU) will provide expertise on assessing the sustainability of animal exploitation for food as well as overall project management, supervision of student training and international liaison. Dr Julia Jones has eight years research and conservation experience in Madagascar and speaks Malagasy. Her research focuses on assessing the sustainability of wildlife exploitation and the role of traditional institutions in conservation. The work of the host country partner (MV) will be coordinated by Julie Razafimanahaka, who is about to obtain her MSc from the University of East Anglia on a Darwin Scholarship. MV will coordinate and perform the field surveys and ensure close liaison between the project and other interested national parties. MV will work with local groups such as community forest management committees (COBAs) to deliver the project. Students from ESSA-Forêt, will be trained during this project and faculty staff will contribute to project design, supervision and monitoring. This department is a feeder for recruitment by the Ministry of Environment, Forests and Tourism, thus adding to the project's potential legacy. Institute Pasteur will coordinate the screening of samples for zoonotic diseases. The project has the full support and involvement of the Ministry of Environment, Forests and Tourism. They will help direct the research, ensuring that the activities are aligned with the priorities of the Malagasy government and will implement the findings. Conservation International will support the project financially and help to integrate the results into the development of management plans for two new protected areas.

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

**Please give details:**

This is a new initiative but builds on a number of successful pilot projects by Madagasikara Voakajy where bushmeat use was assessed in the Ankeniheny-Zahamena Corridor (\$25,000 Sep. 08 – Apr. 09), Anosibe An’ala (\$9,000 SeaWorld and Busch Gardens Sep. 08 to Aug. 09) and Menabe (£4,000 Peoples’ Trust for Endangered Species, Jun. 07 to Apr. 08).

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

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

A number of small studies have looked at bushmeat (though most have focused on illegally hunted species such as lemurs). The only current study we know of is that of Chris Golden, a PhD student from the University of California, who has been working on bushmeat in the Makira forest (north-east) since 2004. We have discussed our respective projects and established that there is very little overlap and potential for real synergy between the two projects. Institute Pasteur has carried out some preliminary research on zoonotic viruses carried by bats in Madagascar.

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

At least one must be selected.

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

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

Convention on Biological Diversity (CBD)  Yes  No

CITES  Yes  No

Convention on Migratory Species (CMS)  Yes  No

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

Madagasikara Voakajy personnel have encountered widespread hunting and consumption of bushmeat during their fieldwork. A number of nominally protected threatened species are hunted across the island and game species are subject to high off-take. However, despite its ubiquity, almost nothing is known about the biological, socio-economic or human health impact of this bushmeat exploitation and there has been very little research into the sustainability of harvests or possible zoonoses. The new protected area network being established in Madagascar includes ‘sustainable use zones’ and the authorities are concerned that too little is known about current use of bushmeat. Following discussion with academic and government institutions, MV decided to act and obtained a series of small grants to carry out preliminary investigations and trial methods. MV approached Julia Jones at Bangor University for technical advice which led to this request to the Darwin Initiative.

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

We will provide a better understanding of the drivers of illegal bushmeat hunting allowing improved targeting of education and enforcement activities. We will also focus on productive game species and highlight the importance of well-managed native habitats in providing a sustainable source of meat. By investigating the efficacy of traditional rules in managing resources (e.g. bat roosts), the project will support those seeking to strengthen the role of such local institutions and may result in traditional agreements (*dinas*) being recognised in local law. The project may result in alterations to national legislation as our data will allow a reassessment of current rules. Information on the risk of zoonoses from bushmeat which may result in a change in government policy and/or a widespread education programme. The students trained will represent improved capacity for Madagascar to address these issues into the future. MV’s capacity to carry out large independent projects will be enhanced.

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

Madagascar is considered one of the world’s hottest biodiversity hotspots due to its incredible, but highly threatened, biodiversity. In recognition of this, the country has recently massively expanded its protected area network to cover most of the country’s remaining natural habitat. Many sites are IUCN Category III-VI so hunting of game species is permitted. However, to avoid the empty forest effect (where habitat is retained intact but edible animals are absent) the issue of overexploitation

of legally hunted species, and illegal hunting of protected species, must be addressed. Illegally hunted species include threatened lemurs, some of which face extinction due to overexploitation. Game species include endemic bats and tenrecs which play important roles in ecosystem functioning but are suffering large population declines. Thus this project is important both in reducing the threats faced by specific species but also in helping to maintain the integrity of the new protected areas.

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

This project is based on the CBD principle that biodiversity loss needs to be reduced by promoting sustainable use. By reducing the rate of loss of endemic species we will contribute towards the 2010 Biodiversity Targets of the CBD. We will also directly contribute to Article 6 (General Measures for Conservation and Sustainable Use), Article 8 (In-situ Conservation), Article 12 (Research and Training), Article 13 (Public Education and Awareness) and Article 18 (Technical and Scientific Cooperation). Madagascar has a National Strategy for the Sustainable Use of Biodiversity which outlines the government's position on the CBD. Our project will contribute to two of the strategic objectives: 'Valorisation of biodiversity (2)' and 'Reduced pressures on biodiversity (3)'. We will work towards: 2.1 Improving awareness of the economic, ecological and sociological importance of biodiversity; 2.2 Improving commercial appreciation and use of biodiversity; 3.1 Encouraging behavioural change in people; 3.2 Application of legislation.

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

The results from this project will be disseminated at a number of different scales. We will submit annual progress reports and work plans (in French with Malagasy summaries) to the regional directors of the Ministry of Environment and Forests and to their headquarters in Antananarivo. A final report will be more widely disseminated within Madagascar. We will hold regular meetings with stakeholders in both study areas (involving representatives of government and traditional authorities) for two-way information transfer. Other dissemination activities will include the public defence of student theses, websites and publications in English and French in international and regional journals. Results from the virus screening will be discussed with partners and other government departments. MV has a good record of getting media coverage within Madagascar and we will work to ensure a high profile for our project activities and findings, all of which will promote the Darwin name. The Bangor University press office will support the PI to maximise media coverage within the Welsh and UK media, again emphasising the Darwin brand. All project activities, reports, workshops and websites will be clearly branded as 'Darwin' with the Darwin name and logo featuring prominently on all project materials.

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

The long term benefits to the host country are as follows:

- Malagasy government is helped to implement its commitments under the CBD;
- Improved policies for reducing hunting of protected species;
- Hunting of game species will receive greater attention in new protected area management plans resulting in improved management and sustainability;
- Initial information available on the risk of disease transfer to humans from consumption of fruit bats, potentially reducing the risk of disease outbreaks;
- Improved recognition of the value of traditional management of hunted populations
- Malagasy students trained to deal with bushmeat issues likely to find employment in NGOs or government;
- Madagasikara Voakajy consolidates its reputation and capacity as a provider of conservation science and applied research and its ability to positively influence conservation policy in the country.

Potential problems include:

- A reluctance by the administration to deal with hunting of game species as this is frequently perceived as low priority;
- The discovery of a pathogenic disease in certain species (e.g. fruit bats) could lead to increased persecution.

**15. State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave? (Max 200 words)**

The project will achieve a number of discrete objectives including producing reviews and research outputs essential for improving management of bushmeat and training students (see project outcomes). Our partnership with the environment ministry (MEFT) and the work by MV, ESSA-forêt and MEFT to identify priorities during project development will ensure these findings are used to reduce pressure on biodiversity. However, the overall purpose of the project is to improve capacity within Madagascar to deal with the issues surrounding management of harvested species and ensure that this is applied. Therefore the impact of the project does not end in 2012. The discrete end points are a necessary but not sufficient condition for success. The project's long term legacy will require post-project engagement by MV staff and Darwin-trained students with our governmental partners and other stakeholders. MV has a good record and an explicit aim of this project is to further strengthen their capacity to carry out this role. If trained individuals leave before the task is complete and remain within Malagasy conservation, their skills still contribute to the project's objective. However MV has so far had low staff turn over and we are confident that key personnel will want to remain.

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

This project aims to build capacity among Malagasy conservationists to address bushmeat harvesting (and the broader issues of natural resource management). We will do this by working with three main groups: students at ESSA-Forêt, staff at MV and local groups. We will identify 5 particularly talented and motivated students and sponsor them through the complete masters degree. They will carry out a research dissertation on one aspect of this project (thus acting as an important resource for the project in terms of data collection) and will also follow courses on GIS and English. Students will obtain a sound knowledge on Malagasy wildlife and protected area legislation, the ability to design, implement and follow-up on projects, experience of a working environment and advanced skills in GIS, statistics and communication. We have discussed training needs with the head of department at ESSA-Forêt. While providing research experience is vital, our partners suggest that there is also a need for work experience within a conservation organisation where students can experience project management and how research findings are translated into conservation action. We will provide this by hosting work-experience places for 3<sup>rd</sup> year students from ESSA-Forêt with MV. The effectiveness of the training will be evaluated through discussions with the head of department at ESSA-Forêt, at meetings with project supervisors and through the final examination of masters. We will maximise the opportunities for students and MV staff to develop by supporting them to present project results at national and international meetings and to involve them in publications. Training will be provided to MV staff, students and members of local groups in sample collecting (by IP). Local groups will also receive training in field work techniques (species identification, data collection etc) which will improve their capacity.



## LOGICAL FRAMEWORK

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Goal:</b> Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
<b>Sub-Goal:</b> Madagascar's hunted endemic species more sustainably managed.	Revised legal framework for sustainable harvesting of game species Sustainable and legal exploitation of wildlife for food explicitly considered in management plans of the new protected areas Traditional rules ( <i>dina</i> ) receiving regional recognition	Copies of research outputs (reports and papers). Agenda, meeting records and management plans. Evidence from outputs of workshops and government committees  Copies of <i>dinas</i> signed by traditional authorities and government officials	
<b>Purpose</b> Improved capacity within Madagascar, in terms of scientific and socio-economic understanding, applied to improving the management of harvested endemic species.	Policies developed, advocated and implemented to improve management of bushmeat Exploitation of game species included within management plans of new protected areas Traditional management given greater recognition Students in a position to be recruited to responsible positions MV able to attract funding in the future and influence policy	Project reports, management plans for new protected areas, student records and theses, MV annual report	Sustainable exploitation of natural resources remains a national priority. New protected areas allow the harvest of game species. Communities agree to develop and implement harvest plans for game species
<b>Outputs</b> 1 Review of vertebrate species that are listed as game under Malagasy law with respect to their distribution, biology, status and the extent to which they are hunted	1.a Report (French & English) 1.b Peer-reviewed publication 1.c Seminar to discuss results 1.d National-level government involvement	Copies of reports, publication, seminar and workshop attendance record and agenda	Government representatives are available and willing to engage
2. Determine the factors that influence patterns of exploitation	2.a Field data collected and analysed	Copies of data, student theses, publications	Cooperation of the general public

3. Determine the impact of hunting for species that make important contributions to rural livelihoods,	3.a Data collected on hunting levels and biological parameters and analyzed and published	Copies of data, student theses and publications	Cooperation of the general public, field logistics allow planned data to be collected
4 Recommendations for revisions to national legislation prepared with the Malagasy government	4.a Report in French and English produced for the government (national and regional) containing recommendations 4.b Meetings/small workshops held with key staff of relevant government departments	Reports and meeting records	Assumes that our research does find some areas which need revision
5 Assess the knowledge of rules concerning hunting of wild species among relevant groups	5.a Data collected on knowledge of hunting rules and socio-economic predictors of this knowledge in two regions of Madagascar	Copies of questionnaires, data, student thesis and publication.	Willingness to participate in the surveys among local people
6. Greater recognition of traditional knowledge incorporated into regional policy	6.a Local management of hunted populations (eg local <i>dina</i> to protect bat roosts, <i>fady</i> governing timing of hunting) recorded and given regional recognition	Signing of locally agreed <i>dina</i> with regional recognition.	Support of local communities, that appropriate <i>dinas</i> and <i>fady</i> are operating in the study area (preliminary data suggests they are)
7. Analysis of the risk of disease transfer from humans eating bats (Nipah and Corona viruses)	7.a Biological samples collected and analysed 7.b Results communicated to national government on risk level and avoidance 7.c Dissemination plan to hunters designed and implemented with national government	Publication, copies of meeting records with government, evidence of the dissemination plan implemented (radio broadcast, posters)	Institute Pasteur continues to be independently funded, government dissemination plan only required if risks are detected
8. Malagasy masters students (five in total) graduated (Diplôme d'Etude Approfondies) and trained in the skills needed to undertake applied research in conservation science. Six undergraduates undertaking work experience with MV	8.a Student proposals 8.b Student field project data 8.c Student theses 8.d Student graduation certificate 8.e Government staff involved in project e.g. as external examiners	Copies of theses, certificates and lists of external examiners/advisors, work experience reports	That high quality masters candidates can be found who want to undertake projects in line with the priorities of the project, that undergraduates want to undertake the work experience offered.

**Activities** (details in work plan)

- 1.1 Collate all available data on biology, conservation and legislation pertaining to hunted species in Madagascar
- 1.2 Conduct a review of hunting and its impact on animals in Madagascar
- 1.3 Present results to the Malagasy authorities responsible for managing wildlife and hunting
- 2.1 Confirm location of case-study areas and inform local stakeholders
- 2.2 Develop and refine methodology
- 2.3 Training of project personnel (including local associations) to standardise methods
- 2.4 Field data collection (markets, households, hunts)
- 3.1 Identify key species for advanced studies on life history and hunting
- 3.2 Field data collection
- 3.3 Analyses, report writing
- 4.1 Prepare report based on 3.0
- 4.2 Present results to stakeholders
- 5.1 Training of project personnel to standardise methods
- 5.2 Field data collection
- 5.3 Analyses, report writing
- 6.1 Meetings with governmental and traditional authorities in study areas
- 7.1 Training for project personnel to sample and preserve fruit bats
- 7.2 Sample (blood) collection
- 7.3 Screening for viruses
- 7.4 Reporting to authorities
- 8.1 Recruit Malagasy research students
- 8.2 Malagasy students masters courses
- 8.3 Malagasy students masters research projects
- 8.4 Malagasy 3<sup>rd</sup> year students work experience

**Monitoring activities:**

The progress, through lessons, assignments and research projects, of Malagasy students. The extent to which hunting has become an important issue in protected area management planning. The quality of the research outputs being produced. The progress towards traditional management of bat roosts gaining increased and formal recognition

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

Activity	Months	Year 1				Year 2				Year 3			
		1	2	3	4	1	2	3	4	1	2	3	4
1.1 Collate information on hunted species	6	x	x										
1.2 Conduct a review of hunting and its impact on animals in Madagascar	6		x	x									
1.3 Present results to authorities	3				x								
2.1 Confirm location of case-study areas and inform local stakeholders	6	x	x										
2.2 Develop and refine methodology	6	x	x										
2.3 Training of project personnel to standardise methods	6			x	x								
2.4 Field data collection (schools, markets, households, hunts)	12				x	x	x	x					
3.1 Identify key species for advanced studies on life history and hunting	9					x	x	x					
3.2 Field data collection	12							x	x	x	x		
3.3 Analyses, report writing	9										x	x	x
4.1 Prepare report based on 3.0	6											x	x
4.2 Present results to stakeholders	3												x
5.1 Training of project personnel to standardise methods	3			x									
5.2 Field data collection	12				x	x	x	x					
5.3 Analyses, report writing	9								x	x	x		
6.1 Meetings with governmental and traditional authorities in study areas	9	x				x				x			
7.1 Training for project personnel to sample fruit bats	3		x										
7.2 Sample (blood) collection	18	x		x		x		x		x		x	
7.3 Screening for viruses	9		x	x	x	x	x	x	x	x	x		
7.4 Reporting to authorities	6							x				x	
8.1 Recruit Malagasy research students	9	x				x				x			
8.2 Malagasy students masters courses (taught component)	18	x	x			x	x			x	x		
8.3 Malagasy students masters research projects	18			x	x			x	x			x	x
8.4 Malagasy 3 <sup>rd</sup> year students work experience	9			x				x				x	

**19. Please indicate which of the following Standard Measures you are likely to report against.** You will not necessarily plan to cover all these Standard Measures in your project.

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

## PROJECT BASED MONITORING AND EVALUATION

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

As well as informal monthly reviews, formal meetings will be held every 6 months at the MV offices specifically to monitor the indicators listed in the log frame and progress towards the project's overall goal. This process will be chaired by Julie Razafimanahaka (MV), with Richard Jenkins (BU), Bruno Ramamonjisoa (ESSA-Forêt), DI-supported masters students and work experience students also present. At the end of the project we will hold a larger review meeting with other stakeholders where we will review the project and identify what steps need to be taken to capitalise on progress made during the project to ensure the overall goals are met in the long term. We will report our progress towards our indicators using the standard measures indicated above. For example we expect 5 students to obtain masters degrees (2) and accredited GIS and English qualifications (3), 6 undergraduates to obtain 4 weeks each of work experience (4A, B). Julia Jones and Richard Jenkins will spend a total of 95 weeks working in the host country (8). We will organise a number of meetings, workshops and seminars locally and nationally (14A). We expect to submit at least 5 peer reviewed papers over the course of the project (11A,B) and to get significant media coverage in the UK and Madagascar (15, 18, 19). Project members will attend national and international meetings to disseminate project findings (14B). We will work hard throughout the project course to raise extra funds to expand the scope of the project, possibly increasing the number of students we can support to carry out research towards the project's aims (23).

## FUNDING AND BUDGET

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

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

**21. How is your organisation currently funded? (max 100 words)**

Bangor University is a UK Higher Education Institution funded for teaching and research mainly through grants from the Higher Education Funding Council for Wales which is sponsored by the Welsh Assembly Government and has responsibility of funding the Welsh Higher Education sector. The Institution acquires other funding through tuition fees and education contracts, and externally funded research grants and contracts. The University is an independent corporation whose legal status derives from a Royal Charity originally granted in 1885. Bangor University are also a charity exempt from registration per Schedule 2 section (c) of the Charity act of 1993.

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

### **Confirmed:**

MV have (with input from Julia Jones at Bangor University) been successful in attracting small grants from a variety of sources including the Maurice Laing Foundation, IUCN, CI, National Geographic Society and Disney Wildlife Conservation Fund, to support the field research elements of this project. We have a total of £37,282 raised towards the first year (see budget for full details). This DI grant will massively increase the impact of these small grants. In addition, Bangor University is providing £81,818 in matched funding through staff salaries and in overhead contribution.

### **Unconfirmed:**

Conservation International has indicated that they will give £12,000 in the 2<sup>nd</sup> year and £8,000 in the final year of the project. We are awaiting confirmation. We also hope to get further funding from the Disney Wildlife Conservation Fund and Columbus Zoo to a total of £11,500.

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

<b>Financial resources:</b>
<b>Funding in kind:</b> MV will provide use of offices in Antananarivo and Moramanga, plus literature, equipment and vehicle use (to a total estimated value of £17,835 over the three years-see budget). Institute Pasteur is not charging for the considerable staff time (estimated at £17,100 over the three years-see budget) and storage costs required. ESSA-forêt will not charge for their time involved in the project, this will amount to approximately 10% of Bruno Ramamonjisoa's time.

**FCO NOTIFICATIONS**

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

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

**CERTIFICATION 2009/10**

On behalf of the trustees/company\* of School of the Environment and Natural Resources, Bangor University  
(\*delete as appropriate)

I apply for a grant of £299,475 in respect of expenditure to be incurred in the financial year ending 31 March 2010 on the activities specified in the above application.

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

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

Audited accounts are available at:<http://finweb.bangor.ac.uk/e/bu/aa/0607.pdf>

<b>Name (block capitals)</b>	Paul Storey
<b>Position in the organisation</b>	Accountant

Signed  Date:

## Stage 2 Application - Checklist for submission

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

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

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