Darwin Initiative for the Survival of Species

Final Report

1. Darwin Project Information

Project Reference No.	EIDP 10
Project title	Bat Conservation Madagascar
Country	Madagascar and United Kingdom
UK Contractor	University of Aberdeen
Partner Organisation (s)	Département de Biologie Animale, Université d'Antananarivo
Darwin Grant Value	£71,800
Start/End date	1 April 2005 to 31 March 2007
Project website	
Author(s), date	Richard K. B. Jenkins and Paul A. Racey May 2007

2. Project Background/Rationale

- Describe the location and circumstances of the project

This was a follow up project designed to consolidate two successful capacity building projects on bat conservation funded by the Darwin Initiative in Madagascar. Darwin project leaders, assistants, trainee, reviewers and host country partners all recognised the need to sustain the progress made in providing Madagascar with a group of highly motivated and well trained bat biologists.

- What was the problem that the project aimed to address?

Once capacity has been built it needs to be nurtured and supported. With an emphasis on training field biologists, the University of Aberdeen focussed on building the capacity of Malagasy students to conserve bats. Since the inception of the training programme, 19 students have received Darwin Initiative-sponsored training. It became clear however that even the most gifted biologists were finding it difficult to find employment in bat conservation-related activities. This is not surprising because it was the chronic neglect of bat conservation by international NGOs and government in the first place that produced the capacity-gap that resulted in the need for our training projects. This project therefore aimed to create a national biodiversity organisation to enable leading biologists to remain active in the field of bat conservation and to take greater responsibility for their future.

- Who identified the need for this project and what evidence is there for a demand for this work and a commitment from the local partner?

The first need for this project was identified by Richard Jenkins who had experienced of

three previous Darwin Initiative capacity building projects that successfully trained Malagasy students and generated enthusiasm and optimism, only for there to be very little support available after the Darwin funding ended. The idea to create a new organisation was discussed with our host country partners and leading NGOs. A resounding need was identified because of the lack of Malagasy NGOs in biodiversity conservation and the need for a permanent team of bat experts. All of the people consulted provided letters of support for our application to the Darwin Initiative and individuals from four host country partners agreed to join our board of trustees.

3. Project Summary

- What were the purpose and objectives (or outputs) of the project? Please include the project logical framework as an appendix if this formed part of the original project proposal/schedule and report against it. If the logframe has been changed in the meantime, please indicate against which version you are reporting and include it with your report.

The main purpose was to create a Malagasy biodiversity organisation to provide a permanent bat conservation team and consolidate the previous capacity building projects whilst also meeting the aspirations of Darwin assistants and trainees.

Few objectives were explicitly defined in the original proposal because we needed to be able to respond to emerging conservation needs. However, indicators of our success include the legal registration of the new organisation ***Madagasikara Voakajy*** (pronounced voo-a-kadgee), new host country partnerships formed, coverage on national media and our inclusion as new participants in conservation planning. A good example of the latter is regarding the ongoing plan to triple the protected area system in Madagascar and our team was (or will be in 2007) involved in surveying bat roosts near four proposed new protected areas. Having an established office, team and identity has enabled us to also become involved in the post-survey work such as planning and delimitation.

We can also justifiably claim to have kept bats on the conservation agenda. Four Malagasy students graduated during the project period and our education and awareness campaign reached 1,072 primary school children and 104 teachers from 14 rural schools. During the project period we, along with our co-workers, described three new endemic species of bat to Madagascar.

- Were the original objectives or operational plan modified during the project period? If significant changes were made, for what reason, and when were they approved by the Darwin Secretariat?

Nothing to report

- Which of the Articles under the Convention on Biological Diversity (CBD) best describe the project? Summaries of the most relevant Articles to Darwin Projects are presented in Appendix I.

Articles 7, 8,12, 13 & 14.

- Briefly discuss how successful the project was in terms of meeting its objectives. What objectives were not or only partly achieved, and have there been significant additional accomplishments?

Objective 1: Meeting the ambitions of Malagasy project staff and local partners to have a

permanent bat conservation team

A Malagasy biodiversity organisation called Madagasikara Voakajy (translated as Madagascar Conserved) was formed on 10 May 2005. This new biodiversity organisation created by the project defined its remit as 'endemic vertebrates' and was not conservation restricted to bats. The NGO Conservation International funded a 2-day workshop and a consultant to assist the existing Darwin team and the invited members of the new board to create the organisation. During discussions it was agreed that a wide remit would give the organisation greater flexibility in the future whilst allowing it to retain and focus on its bat expertise. This strategy has already paid dividends. Madagasikara Voakajy now employs two full-time Malagasy herpetologists (this is unique in Madagascar), one of whom was a Darwin trainee on the University of Kent (DICE) chameleon project in 1996-1998. We have managed to obtain a number of grants to support our work on threatened chameleons and amphibians, including a recent project that aims to conserve endangered *Mantella* frogs at a site where we have established good community relations through ongoing flying fox conservation. All

The board of trustees of Madagasikara Voakajy is as follows:

Mme Nanie Nanie Ratsifandrihamanana (President)

Conservation Director, WWF Madagascar

Dr Joelisoa Ratsirarson

Chief of Staff to the President of Madagascar (2007-)

General Secretary, Ministry of the Environment, Water and Forest (2005-07)

Associate Professor, Ecole Supérieure des Sciences Agronomiques (ESSA), Département des Eaux et Foret, Université d'Antananarivo

Dr Daniel Rakotondravony

Head of Department, Departement de Biologie Animale, Université d'Antananarivo

Dr Jonah Ratsimbazafy

Durrell Wildlife Conservation Trust, Antananarivo

Mme Chantal Andrianarivo

Association National pour la Gestion des Airess Protogees

4. Scientific, Training, and Technical Assessment

- Please provide a full account of the project's research, training, and/or technical work.

Geographically, our work was focussed in two main areas but we also visited a number of other sites during the project. Activities were concentrated in the Alaotra-Mangoro Region in eastern Madagascar where we worked with two local NGOs and government officials. Small forest fragments in this region are unprotected and we undertook a varied conservation programme that consisted of school education visits, school building and refurbishment, radio tracking flying foxes, community management and roost surveys.

In the Anosy Region of south-eastern Madagascar we operated as the national partner to Fauna and Flora International and were involved in assisting a Rio Tinto subsidiary

to implement its biodiversity strategy. Our research on pollination ecology of baobab trees by flying foxes took place in western and northern Madagascar. We studied *Hipposideros commersoni*, Madagascar's largest microchiropteran, in eastern littoral forest and dry deciduous forest. Research on habitat use of trident-nosed bats *Triaenops* spp. took place in southern and western Madagascar.

- Research - this should include details of staff, methodology, findings and the extent to which research findings have been subject to peer review

The senior Malagasy research staff during the project (Daudet Andriafidison, Julie Razafimanahaka, Radosoa Andrianaivoarivelo and Amyot Kofoky) all led field study projects on bats. We used mist nets to capture bats and bat detectors to acoustically determine their activity. Movement, behaviour and habitat use were studies using radio tracking. Bat diet was investigated through direct observation and fecal analysis.

During the two-year project period we published 15 research papers in peer-reviewed scientific journals on bats. Three of these were collaborative efforts on taxonomy with the Chicago Field Museum. Of the 12 that consisted of our primary research and survey results, Malagasy Darwin assistants/students were first authors on nine. When these publications reported on results from a student's academic thesis, their supervisors were also listed as co-authors (n = 6). A further two publications were not subject to rigorous peer-review, one in the French language and another on conservation education.

Our main research activities are listed below:

(i) Pollination of endangered baobabs in western dry forests by fruit bats and in the importance of landscape ecology

(ii) Assessing the forest dependency of microchiropterans in deciduous and humid, littoral forests

(iii) Movement and habitat use of fruit bats in a fragmented anthropogenic landscape in eastern Madagascar

(iv) Diet and feeding ecology of bats: seasonality, seed dispersal and selection of habitats

(v) Roosting ecology of bats

Our main conservation activities are listed below:

(i) Surveying bats in and around candidate protected areas (Menabe, Diana, Alaotra Mangoro and Anosy Regions)

(ii) Establishing community based management plans for flying fox roosts

(iii) Designing and implementing bat monitoring protocols

(iv) Investigating the impact of bushmeat hunting on bats in southern Madagascar

Our main education activities are listed below:

(i) In December 2005 we submitted three modules on bat conservation for primary school teachers to the Ministry of Education and Scientific Research. Workshops were held in four different areas of Madagascar (Anosibe An'ala, Moramanga, Fort Dauphin and Antsalova) with ministry officials and regional representatives of education authorities to introduce the modules to the teachers. A year of testing (2006-07) commenced with regular reporting and

evaluation by government representatives. The modules are currently being tested in 14 primary schools.

(i) At a number of our field study sites we conducted 2-day bat conservation events in primary schools. Each school visited was located close to a bat roost. Teachers first received a day of training before introducing the children to the lessons, costumes and games about bat conservation

(ii) Two teaching modules were produced for REPC (Réseau des Educateurs et Professionnels de la Conservation a Madagascar), one of which is under review and the other of which is has been completed.

- Training and capacity building activities – this should include information on selection criteria, content, assessment and accreditation.

A major objective was to implement a sound financial and administrative system. This was achieved with the assistance of WWF who helped to recruit Mhy Andriamampionona and supported her to implement a new system of procedures, contracts and financial reporting during the first year. WWF also provided legal advice regarding disciplinary matters.

The single most important capacity building initiative was to give the senior members of the team the responsibility and confidence to function as specialists in their field and on an equal level to scientists from other institutions. This was only possible through the creation of a new organisation. The biologists concerned have well-honed field skills but were otherwise less experienced. This project has given them the chance to organise and facilitate workshops, present results in national meetings and manage their own assistants and budgets.

Other more formal training concerned our ongoing programme to train Malagasy masters students. During the project period, four completed the defence of their thesis and successfully graduated whilst two more are expecting to finish this year. Assistants, trainees and local partners also completed a number of other training programmes on GIS, GPS, accounting, languages and acoustic analysis.

5. Project Impacts

- What evidence is there that project achievements have led to the accomplishment of the project purpose? Has achievement of objectives/outputs resulted in other, unexpected impacts?

Bats on the conservation agenda – the evidence

(i) Madagasikara Voakajy was invited to participate in a survey of the Mahavavy-Kinkony wetland by Birdlife International Madagascar Programme

(ii) Madagasikara Voakajy was invited to apply for a grant to survey the bats of the Zahamena-Ankeniheny forest corridor

(iii) The bat roosts discovered by Madagasikara Voakajy are being incorporated into the new protected area at Tsitongambarika forest

(iv) Continued financial support obtained for Madagasikara Voakajy's activities from 16 donors

(v) Communities that have received bat conservation awareness hold follow-up events independently and invite Madagasikara Voakajy to participate

(vi) Requests from local communities for technical and financial support to protected bat roosts

- To what extent has the project achieved its purpose, i.e. how has it helped the host country to meet its obligations under the Biodiversity Convention (CBD), or what indication is there that it is likely to do so in the future? Information should be provided on plans, actions or policies by the host institution and government resulting directly from the project that building on new skills and research findings.

The project has led to the creation of a permanent team of bat experts with the capacity to undertake a range of activities that are directly relevant to CBD. These include training, conservation education, conservation surveys, sustainability assessments, in situ conservation with local communities and monitoring. In effect the previous investment by the Darwin Initiative has been consolidated and a new and important resource is available to the government of Madagascar, as well as to conservation organisations. The challenge is to ensure the sustainability of this resource through income generation and project development.

Please complete the table in Appendix I to show the contribution made by different components of the project to the measures for biodiversity conservation defined in the CBD Articles.

- If there were training or capacity building elements to the project, to what extent has this improved local capacity to further biodiversity work in the host country and what is the evidence for this? Where possible, please provide information on what each student / trainee is now doing (or what they expect to be doing in the longer term).

By providing Madagascar's leading bat biologists with a well-equipped base and organisational identity the project has succeeded in creating a national bat conservation unit. This in itself is rare in Madagascar and there is no equivalent organisation for amphibians, reptiles, fish, carnivores, insectivores or lemurs, although birds and plants have established teams. Furthermore, the bat conservation organisation is Malagasy, and this too is unusual because most of the biodiversity conservation organisations in Madagascar are international (e.g. WWF, Wildlife Conservation Society, Conservation International, The Peregrine Fund, Birdlife International, Durrell Wildlife Conservation Trust, Kew Botanical Gardens, Missouri Botanical Gardens).

The change from a project into an organisation was not cosmetic but consisted of a significant improvement in our organisational structure, which has resulted in a greater level of professionalism and accountability. Senior team members were given greater responsibility over budgets, line management and student supervision. In general, these biologists in their early-30s, who had been previously treated as (or thought of themselves as) students, were now given greater responsibility and this resulted in a significant boost to their confidence. The future of Madagasikara Voakajy will hinge on Malagasy biologists and although external technical support will always be needed it is crucial that its senior staff members have experience of project management.

<u>Madagasikara Voakajy Personnel</u>

Daudet Andriafidison

Daudet first received training in bat conservation in the DI/University of Aberdeen 1999-2000 fruit bat project. When the University of Aberdeen microchiropteran project started

in 2002 he was unemployed was recruited to join an expanding team. Since 2004 he has led the fruit bat section of our work and is a senior member of staff. He was accepted onto a PhD programmes at the University of Antananarivo in 2005.

Radosoa Andrianaivoarivelo

Radosoa first received training in bat conservation in the DI/University of Aberdeen 1999-2000 fruit bat project. When the University of Aberdeen microchiropteran project started in 2002 he was working on carnivore conservation and was recruited to join our team. Since 2004 he has worked on fruit bat conservation and registered as a PhD student in

2005.

Noro Razafindrakoto

Noro was a Darwin trainee in 1999 on the DI/University of Aberdeen 1999-2000 fruit bat project but dropped out for family reasons before she was encouraged to return to her studies and she completed her thesis in 2005 under the current DI/University of Aberdeen follow-up project. She is now a project assistant responsible for fruit bats in eastern Madagascar.

Hanta Julie Razafimanahaka

Julie was a Darwin trainee in 2003 and completed her undergraduate thesis with the DI/University of Aberdeen project before joining the team as an employed assistant. The Darwin Initiative levered a WWF Prince Bernhard Scholarship for her DEA degree that she completed in December 2007. She is currently leading a project on bushmeat and insectivorous bats, funded by a British Ecological Society Overseas Bursary and Wildlife Conservation Society Research Fellowship. She has been nominated for a Darwin Fellowship to follow a MSc in the University of East Anglia. Julie is a future conservation leader in Madagascar.

Félicien Randrianandrianina

Félicien joined the DI/University of Aberdeen microchiropteran project in September 2002 and completed his fieldwork in February 2003. He graduated in June 2006 and is a project assistant responsible for microchiropterans and acoustic analysis. He is currently mainly engaged in on projects to develop monitoring protocols for microchiropterans (e.g. acoustic, cave counts) in western Madagascar that is also supported by the Darwin Initiative.

Andrinajoro Rakotoarivelo

Joro joined the University of Aberdeen microchiropteran project in July 2003 and completed his fieldwork in November 2003. He will graduate later this year and is a project assistant responsible for small mammals and invertebrates. He is currently mainly engaged in a project in western Madagascar that is also supported by the Darwin Initiative

Mahefa Ralisata

Mahefa completed her DEA in 2004 with the University of Aberdeen microchiropteran project and is now employed to assist Julie Razafimanahaka.

Amyot Kofoky

Amyot joined the University of Aberdeen microchiropteran project in 2002 and remained with the project until August 2006. He tendered his resignation in July 2006 and stole equipment when he left. He remains active in the field of bat conservation and is registered for a PhD at the University of Mahajunga of which he is an alumnus.

Madagasikara Voakajy Students

(i) Irma Raharinantenaina (Département de Biologie Animale, Faculté des Sciences, Université d'Antananarivo): Microchiropterans of Littoral Forests in South-eastern Madagascar (awaiting her thesis defence)

(ii) Volana Rahaingodrahety (Ecole Supérieure des Sciences Agronomiques, Département des Eaux et Foret, Université d'Antananarivo): Conservation of *Pteropus rufus* in Anosy Région (awaiting her thesis defence)

(iii) Hanta Julie Razafimanahaka (Ecole Supérieure des Sciences Agronomiques, Département des Eaux et Foret, Université d'Antananarivo): Foraging ecology and behaviour of *Hipposideros commersoni* in Tampolo littoral forest (graduated 2006)

- Discuss the impact of the project in terms of collaboration to date between UK and local partner. What impact has the project made on local collaboration such as improved links between Governmental and civil society groups?

Through establishing a permanent conservation team we have provided the government and community groups with a point of contact for bat conservation issues. The importance of this cannot be overestimated. We receive letters from people who have heard about our bat work on the radio. The Madagascar CITES Scientific Authority asks us to comment on proposals to hunt and collect fruit bats.

- In terms of social impact, who has benefited from the project? Has the project had (or is likely to result in) an unexpected positive or negative impact on individuals or local communities? What are the indicators for this and how were they measured?

First, through empowering promising Malagasy biologists to conserve bats and through giving them to confidence to make a difference in biodiversity conservation the project has helped to create a secure and ambitious atmosphere within the team. A number of the team have become engaged, got married or had children during the last two years and this is, amongst other things, related to their employment status.

The project has also levered substantial funds for our local partners and for the duration of the project we covered all salary and overhead costs for the NGO ACCE in Moramanga. In eastern Madagascar we also received a grant to build and refurbish 11 primary schools in villages that are near to flying fox roosts and six of these are already complete.

6. Project Outputs

- Quantify all project outputs in the table in Appendix II using the coding and format of the Darwin Initiative Standard Output Measures.
- Explain differences in actual outputs against those in the agreed schedule, i.e. what outputs were not achieved or only partly achieved? Were additional outputs achieved? Give details in the table in Appendix II.

To date, only one of the DEA students who started the field research during the current project has completed their thesis. Other students to have completed theses during the project conducted fieldwork under a previous Darwin grant. This is explained by the fact that it takes an average of four years to obtain a DEA in Madagascar (see below).

All training targets were met, with reference to languages and GIS, whilst additional training in financial management and advanced acoustic analysis was provided. Two teaching modules for Malagasy universities were produced, and not one as stipulated in the application. Posters on bat conservation were produced for Andasibe.

No specific bat conservation plans were made for protected areas because we were strongly encouraged to participate in the national programme called the Durban Vision which set out to triple the surface areas of parks before 2008. Accordingly, our main focus of activities was surveying bat roosts in areas around proposed parks. We have published significantly more papers than stated in the original application.

No formal seminars were given but rather Madagasikara Voakajy staff participated in a number of meetings. For example, Richard Jenkins was invited in 2005 and 2006 to participate in the Rio Tinto (QMM) Biodiversity Committee meeting in Fort Dauphin. He also co-facilitated a round table discussion on small NGOs at the 'Defying Nature's End: The African Context' workshop on the Millennium Development Goals in Antananarivo.

We have obtained funding for Julie Razafimanahaka to give an oral presentation on 'Conserving Madagascar's fruit bats: a challenge for biologists, government and communities' at the 2007 Society for Conservation Biology Conference in Port Elizabeth, Republic of South Africa. Richard Jenkins will also give an oral presentation on flying fox pollination of endangered baobabs.

- Provide full details in Appendix III of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website database.
- How has information relating to project outputs and outcomes been disseminated, and who was/is the target audience? Will this continue or develop after project completion and, if so, who will be responsible and bear the cost of further information dissemination?

Peer-review publications: all of our results are published (or are about to be) and are therefore in the public domain. Copies are sent by email to all interested parties and co-authors.

Publication list: in March 2007 we sent a bound copy of all of our publications to the head of 15 organisations in Madagascar.

Website: in May 2007 we received funding to prepare a website.

Public events: we participated in Bird Fairs (2005 & 2006) and World Environment Day fairs (2005 & 2006)

Meetings/workshops: our results are also disseminated in meetings where the target audience is usually village elders, community leaders and government officials.

Posters: information on bats as well as research results featured on colour posters.

7. Project Expenditure

- Tabulate grant expenditure using the categories in the original application/schedule.
- Highlight agreed changes to the budget.
- Explain any variation in expenditure where this is +/- 10% of the budget.

Budget	**Grant**	**Expenditure**	**Balance**
Staff costs			
Rent, rates, heating, lighting, cleaning			
Postage, telephone, stationery			
Travel and subsistence			
Printing			
Conferences, seminars etc			
Capital items			
Others (please specify)			
TOTAL			

The main differences in the amount granted and spent for individual budget lines was because the funds available for 'others' were used to support additional salary and travel/subsistence costs.

8. Project Operation and Partnerships

- How many local partners worked on project activities and how does this differ from initial plans for partnerships? Who were the main partners and the most active partners, and what is their role in biodiversity issues? How were partners involved in project planning and implementation? Were plans modified significantly in response to local consultation?

The most active partners were small, grassroots NGOs formed to conserve their local bat populations. We worked mainly with ACCE and Mbarakaly in eastern Madagascar and both were closely involved in project planning and implementation. In 2007 both organisations erected small signs outside their offices referring to themselves as regional partners of Madagasikara Voakajy. Indeed, this type of relationship where Madagasikara Voakajy provides the funds and technical expertise but local NGOs contribute their network of active members and good working knowledge of people in the region, was very successful and is a model that we would like to develop.

We worked closely with three university departments (two in Antananarivo and one in Toliara). We established a close working relationship between staff of the Bureau Programme Education Environnementale (Ministry of National Education and Scientific Research) and held a number of workshops together.

- During the project lifetime, what collaboration existed with similar projects (Darwin or other) elsewhere in the host country? Was there consultation with the host country Biodiversity Strategy (BS) Office?

The University of Aberdeen has a 3-year Darwin Initiative funded project in the Tsingy de Bemaraha National Park that is run from the Madagasikara Voakajy office.

- How many international partners participated in project activities? Provide names of main international partners.

  Conservation International

  WWF

  Birdlife International

  Fauna and Flora International

  Lubee Bat Conservancy

- To your knowledge, have the local partnerships been active after the end of the Darwin Project and what is the level of their participation with the local biodiversity strategy process and other local Government activities? Is more community participation needed and is there a role for the private sector?

Through our range of bat conservation activities we have engaged with a number of different partners, including government, local communities and the private sector. There is considerable potential for greater engagement with the private sector and Madagasikara Voakajy has ongoing projects with Rio Tinto. The long-term extraction plans in Madagascar's new mines provides conservation with a unique opportunity to plan beyond the normal 2-3 year funding cycle.

9. Monitoring and Evaluation, Lesson learning

- Please explain your strategy for monitoring and evaluation (M&E) and give an outline of results. How does this demonstrate the value of the project? E.g. what baseline information was collected (e.g. scientific, social, economic), milestones in the project design, and indicators to identify your achievements (at purpose and goal level).

We evaluate our research against two criteria (i) was the study published in a peer-reviewed journal? and (ii) were the results useful? The former is important as a quality indicator and means of dissemination. A large amount of data are collected every year in Madagascar but languish in draft reports that are unavailable to the wider scientific community. Not all the results from research investigations can be applied to conservation projects. The results from our roost surveys are currently being used in ongoing conservation planning of new protected areas, whilst publications on seed dispersal and pollination by fruit bats can be used as levers for their conservation. Data on habitat use, distribution and taxonomy are important for assessing the conservation status of individual species. It is often more difficult to evaluate the impact of conservation education programmes. We know from the pictures drawn by school children that they understand the important ecological role of bats but we have yet to demonstrate a concomitant reduction in pressure at individual roosts.

The information we collect is used to:

1) Assess conservation status of bats
2) Establish baselines for monitoring
3) Describe new species of bats
4) Modify wildlife laws

5) Create new protected areas
6) Engage communities in bat conservation

- What were the main problems and what steps were taken to overcome them?

In July 2006 the board of Madagasikara Voakajy and its staff met to discuss strengths, weaknesses and opportunities. A number of these were addressed and below we list the remaining weaknesses as perceived by the team, in addition to the strengths and opportunities.

STRENGTHS	**NOTES**
Young and dynamic team	Age range (25-34 years), average 30 years
Good internal communication *within* teams	i.e. logistic, administration and conservation teams
Distinctive niche	Landscape ecology, monitoring, plant-animal interactions, bats, chameleons
High competence in specialist fields	Bats, herpetofauna, GIS, environmental education
Resource access	24/7 access to office, 24 hr internet and wi-fi
Access to new training opportunities	Computers, GIS, languages
Good interaction between disciplines	e.g. monitoring (bats, herps), GIS (bats, herps)
Office space	3-storey house (6 offices and 1 open plan room)
Resources 1 (e.g. vehicles)	2 4x4 vehicles
Resources 2 (e.g. field equipment)	Acoustic sampling, computers, torches, GPS
Good access to scientific literature	Hard copy and pdf
High profile and dedicated Board of Trustees	From WWF, government, University of Antananarivo, ANGAP and DWCT
Good and improving publication record	Papers in Oryx, Animal Conservation, Biotropica and Biodiversity and Conservation recently
Financial management	Close scrutiny of field budgets and expenditure
Academic supervision of students	Malagasy masters and PhD students
Existing collaborations between Malagasy partners	Protocols of collaboration with universities of Antananarivo, Toliara and ANGAP
Good communication between director and staff	Regular contact, door always open

WEAKNESSES	**NOTES**
Age of our vehicles = high maintance/reduced reliability	Landrover (1999: 210,710 km), Nissan Patrol (1998, 336,426 km)
Lack of long term plans and funding	Funding horizons are short term
Linguistic capacity of staff	English, French and Malagasy
No sign post to the office on main road	Visitors often get lost on the way to our office
Salaries are lower than for international NGOs	Risk of staff leaving for financial gain
Absence of a clear salary scale	

OPPORTUNITIES	
International partnerships	e.g. Birdlife, FFI, Lubee Bat Conservancy, CI, WWF
New regional partnerships	e.g. Western Indian Ocean fruit bats/*Phelsuma*
New national partnerships	Apply for funding *with* large NGOs (e.g. WWF)
Collaborating with business	e.g. ecotourism

Biodiversity offsets and monitoring projects	Advising and implementing biodiversity plans for the extraction industry
Expansion of herpetofauna projects	e.g. *Mantella* in the east
Increased role for staff in fund raising	Especially French language applications
Greater alignment with government plans (e.g. Durban Vision)	Become more donor driven
Assessing livelihoods and bats	Disease, famine, bushmeat, taboo and sustainable harvest

A main constraint to reporting on training projects in Madagascar is that it takes an average of 3 years for a masters student to complete the field research and defend a thesis. This has obvious implications for reporting against targets in a two or three -year project. During this current project only one student conducted fieldwork and graduated during two years. Traditionally, students at the Département de Biologie Animale (DBA) require longer than Ecole Supérieure des Sciences Agronomiques (ESSA forêts) and a good example is given below of two recent Darwin trainees from these departments:

July- October 2003: Julie Razafimanahaka fieldwork, undergraduate degree (ESSA forêts)

July- October 2003: Joro Rakotoarivelo fieldwork, masters degree (DBA)

June 2004: Julie Razafimanahaka defends her thesis

April 2005: Julie Razafimanahaka begins her masters degree

December 2005-March 2006: Julie Razafimanahaka fieldwork, masters degree

November 2006: Julie Razafimanahaka defends her thesis

May 2007: Joro Rakotoarivelo is still waiting for his thesis to be approved for its public defence

This exemplifies the difference between the two departments more than anything else. It is a mystery why it takes so long to obtain a DEA with our main host country partner, although greater drive from all staff and students concerned would certainly help.

December 2005:

- During the project period, has there been an internal or external evaluation of the work or are there any plans for this?

The board of Madagasikara Voakajy meets once a year to evaluate progress. In March 2007 we were visited and reviewed by Andrew and Blaise Cooke as part of the Darwin assessment on island projects.

- What are the key lessons to be drawn from the experience of this project? We would welcome your comments on any broader lessons for Darwin Initiative as a programme or practical lessons that could be valuable to other projects, as we would like to present this information on a website page.

    1. Capacity building is not enough (in Madagascar). If Darwin projects end up as factories that churn out students who will only have a very slim chance of ever working professionally in their chosen field then it will have a shaky legacy. In our opinion, Darwin could secure its legacy and raise its profile by offering longer-term (or rolling) grants to support genuinely successful projects.

2. The Darwin Initiative has made a significant contribution to bat conservation in Madagascar (see figure below). Before the first University of Aberdeen Darwin projects there was only a single Malagasy student with experience of bats (through a University of Aberdeen expedition) and between 1993 and 1999 there were three papers published on Malagasy bats (web of science search and African Bat Conservation Newsletter). During the period of the two capacity training projects (1999-2000 and 2002-2004), three more papers were published and two of these were co-authored by Darwin trainees. Since 2004 there has been an explosion in publications on bats from Madagascar and this can be attributed to:

    i. Previous neglect, so there were huge opportunities

    ii. Darwin Initiative capacity building during 1999-2004

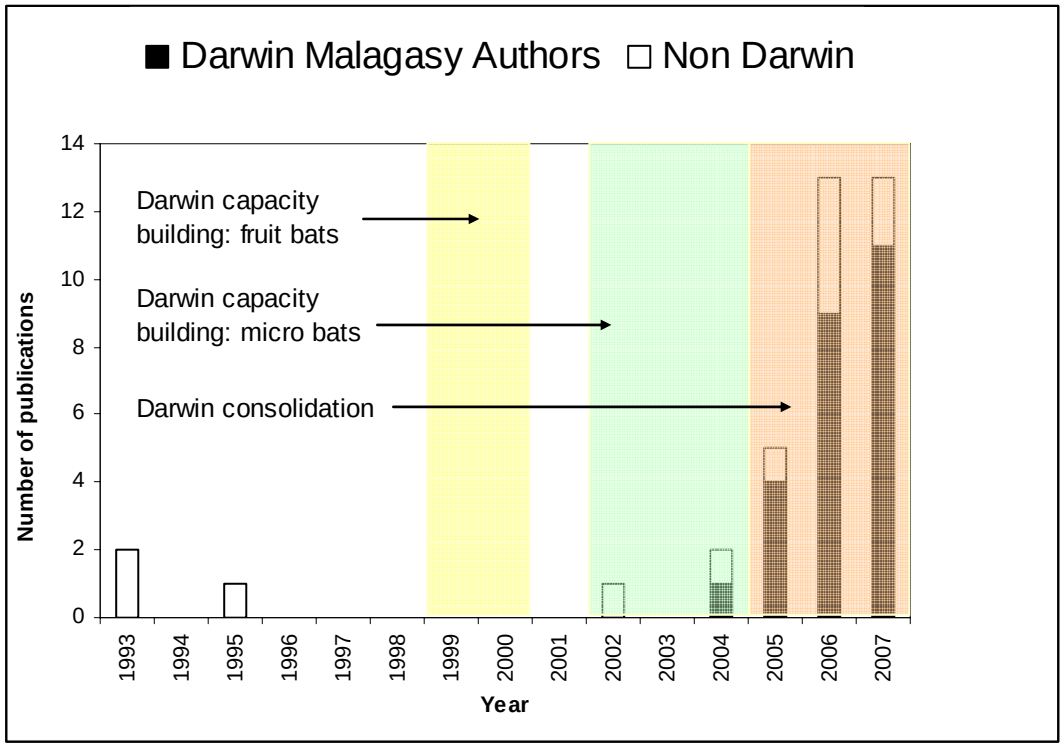
    iii. Darwin Initiative funded research and surveys 1999-2004

    iv. The publishing cycle – field data collection, analysis, writing, submission and publication often takes 2-4 years

    v. Four Darwin trainees joined the Chicago Field Museum/WFF mammal research group led by Dr Steve Goodman

    vi. The creation of Madagasikara Voakajy and presence of a UK postdoctoral biologist

Of the Darwin 10 trainees that were involved in the 1999-200 project, four are now currently doing PhDs on bats at the University of Antananarivo. The figure below clearly shows that the surge in interest in bat conservation since 2002 and the contribution made by Darwin trained Malagasy biologists.



Perhaps the main weakness so far is that so few of the bat trainees are actively employed in other organisations, although we note that Volana Rahaingodrahety was recently recruited to work for the Ministry of Environment, Water and Forests in Fort Dauphin and Julie Ranivo is teaching at the Department of Animal Biology, University of Antananarivo. The lesson from this is the critical importance of Madagasikara Voakajy as a training, research and conservation organisation. It is worthwhile noting

that despite several large projects that trained a number of Malagasy students in amphibian and reptile biology, there is no recognisable national conservation team for this group.

3. Agenda setting. Although it is crucial that Darwin projects receive the endorsement of host country governments they benefit from being independently identified and funded. For example, it is unlikely that staff at Ministry of Environment, Water and Forests would have identified bats as a priority in 1998.

10. Actions taken in response to annual report reviews (if applicable)

- Have you responded to issues raised in the reviews of your annual reports? Have you discussed the reviews with your collaborators? Briefly summarise what actions have been taken over the lifetime of the project as a result of recommendations from previous reviews (if applicable).

There were no major issues raised by the reviews.

11. Darwin Identity

- What effort has the project made to publicise the Darwin Initiative, e.g. where did the project use the Darwin Initiative logo, promote Darwin funding opportunities or projects? Was there evidence that Darwin Fellows or Darwin Scholars/Students used these titles?

The Darwin logo was used mainly on posters and publicity for public events, as well as publications when the journal permitted. We rarely refer to the various Darwin titles listed above, but regularly use the titles Darwin Assistant and Darwin Trainee.

- What is the understanding of Darwin Identity in the host country? Who, within the host country, is likely to be familiar with the Darwin Initiative and what evidence is there to show that people are aware of this project and the aims of the Darwin Initiative?

We use the Darwin logo whenever possible. It is not easy to determine with any confidence how the Darwin Initiative is perceived in Madagascar. Clearly, the host country partners recognise the name and the logo but otherwise it may just be one logo among many others. For example, we produce a desk calendar every year that is widely distributed in the biodiversity sector and amongst partners. The Darwin logo is featured but so also are the logos of our other funders. If publicity and profile is as, or more, important than a robust legacy then we recommend that in future each project team is supplied with t-shirts, stickers and pens with the Darwin logo. We could also, for a very small cost, translate the Darwin aims into Malagasy if there were any generic posters available. We received significant co-funding (£40k) from the BP Conservation Programme (BPCP) to support this Darwin Initiative project. The BPCP invited us to provide photos and text of our project, which they then produced as a high quality, laminated poster that we have taken to every public event and is prominently displayed in our office. Sadly however, the poster is in English. For a modest cost Darwin could fund one high quality, laminated poster in the local language per project to publicise the Darwin Initiative as well as the project's goals. In order to consolidate its legacy in Madagascar the Darwin Initiative should support Madagasikara Voakajy.

- Considering the project in the context of biodiversity conservation in the host country, did it form part of a larger programme or was it recognised as a distinct project with a clear identity?

We very much have our own identity, which is perhaps inevitable considering our background in bats. Furthermore, as we are active in many different regions of Madagascar it is often bats that unites our various activities.

12. Leverage

- During the lifetime of the project, what additional funds were attracted to biodiversity work associated with the project, including additional investment by partners?

  During the project we obtained an additional £161,000 for a project on small vertebrates in western Madagascar and £156,200 in small grants (see below).

Funders	Number of grants	Total awarded
Conservation International	5	£26,008
Fauna & Flora International	4	£21,340
Seacology Foundation	1	£16,216
Lubee Bat Conservancy	3	£15,143
National Geographic Society	1	£11,916
Whitley Fund for Nature	1	£10,000
Disney Wildlife Conservation Fund	1	£9,620
Conservation, Food and Health Foundation	1	£8,735
Wildlife Conservation Society	1	£8,648
British Ecological Society	1	£7,000
International Foundation for Science	1	£5,945
Rufford Foundation	1	£4,992
Peoples' Trust for Endangered Species	1	£3,500
WWF	1	£3,456
BP Conservation Programme	2	£1,610
Cleveland Metroparks Zoo	1	£1,486

- What efforts were made by UK project staff to strengthen the capacity of partners to secure further funds for similar work in the host country and were attempts made to capture funds from international donors?

Significant efforts were made by Richard Jenkins and Paul Racey to obtain additional funds, both for the new organisation and for local partners. In some cases, we were successful in obtaining funding for local partners that was administered by Madagasikara Voakajy. The majority of funds raised came from international donors.

13. Sustainability and Legacy

- What project achievements are most likely to endure? What will happen to project staff and resources after the project ends? Are partners likely to keep in touch?

Bats will remain on the conservation agenda as long as Madagasikara Voakajy can continue to employ Malagasy bat biologists. The legacy therefore is ultimately linked to the continued acquisition of grants to support Madagasikara Voakajy staff and projects. Whilst we have been relatively successful to date the vast majority of the fund raising (> 95%) is undertaken by Richard Jenkins. Senior Malagasy staff at Madagasikara Voakajy establish personal contact with donors once a grant has been received and also prepare the technical reports and update, yet it is difficult to see how the current funding levels can be maintained without the input of Richard Jenkins. Long term, the plan is to recruit a Malagasy director and to increasingly access in-country funding that is easier to obtain and report on in French. All of the resources obtained during the project will remain with Madagasikara Voakajy.

Madagasikara Voakajy is a living legacy for the Darwin Initiative and has the potential to become the leading biodiversity conservation organisation in Madagascar. Its legacy does not need to be improved but it needs to be sustained. Although we have obtained a number of grants during the project period, and with the exception of another Darwin Initiative project in

the west, the average amount granted was £5,670, the maximum awarded was £17,500 and no grant was for longer than 24 months. Sequential short-term project funding

increases insecurity and inhibits realistic planning. The value of this follow up was that is secured the salaries of key staff and covered some of the other core costs which allowed us to raise additional funds for projects. Ideally, this model could be maintained to provide job security to Malagasy staff and to ensure that levels of income and technical outputs are continued.

We are in the process of seeking funding for the next few years for Madagasikara Voakajy. We have made some strategic partnerships to assist this process. For example, we recently became the national partners to Fauna and Flora International and have signed a 3-year protocol that states shared objectives and a commitment to work together to obtain funding. We have a similar relationship with the Lubee Bat Conservancy, although they provide us with $2k direct funding per year from their own resources, we recently successfully applied for a joint grant for $19k.

- Have the project's conclusions and outputs been widely applied? How could legacy have been improved?

We have three main conclusions:

1. Small forest fragments are important and should be protected because they are used by roosting flying foxes
2. Bats and are threatened and need to be protected but conservation actions need to be designed at the local level
3. Bat roosts and feeding areas are physically separate but both need to be protected to maintain the important ecological services provided by bats

Uptake of these messages is slow but we are beginning to see some evidence that our conclusions are being adopted. Most notably, efforts are underway to include some bat roosts in Madagascar's new protected areas.

- Are additional funds being sought to continue aspects of the project (funds from where and for which aspects)?

We are continually seeking project funds to sustain and develop Madagasikara Voakajy. Our main themes for the next three years will be (i) human livelihoods and bat bushmeat (ii) participatory community monitoring of bat roosts and (iii) quantifying the ecological role of bats. We anticipate applying to the Darwin Initiative, Rufford Foundation and Conservation International for major project funding.

14. Value for money

- Considering the costs and benefits of the project, how do you rate the project in terms of value for money and what evidence do you have to support these conclusions?

We consider the project to have been excellent value for money for three reasons:

(i) Richard Jenkins was only employed part time (50% yr 1, 40% yr 2)

(ii) Between applying for this project and submitting the final report we raised an additional £317,222 from 31 grants, of which £161,100 came from another Darwin Initiative project. Excluding the other Darwin Initiative we raised more than double the amount received in this project (received £71,800, raised an additional £156,122)

(iii) An expert team was already in place with strong credentials and good working relationships with a number of local partners and overseas institutions

15. Appendix I: Project Contribution to Articles under the Convention on Biological Diversity (CBD)

Please complete the table below to show the extent of project contribution to the different measures for biodiversity conservation defined in the CBD Articles. This will enable us to tie Darwin projects more directly into CBD areas and to see if the underlying objective of the Darwin Initiative has been met. We have focused on CBD Articles that are most relevant to biodiversity conservation initiatives by small projects in developing countries. However, certain Articles have been omitted where they apply across the board. Where there is overlap between measures described by two different Articles, allocate the % to the most appropriate one.

Project Contribution to Articles under the Convention on Biological Diversity		
Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use	15	Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring	15	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation	15	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation	0	Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	5	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures	0	Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.

12. Research and Training	30	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	15	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts	5	Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources	0	Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
16. Access to and Transfer of Technology	0	Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information	2.5	Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol	2.5	Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Total %	100%	Check % = total 100

16. Appendix II Outputs

Please quantify and briefly describe all project outputs using the coding and format of the Darwin Initiative Standard Output Measures.

Code	Total to date (reduce box)	Detail (←expand box)
Training Outputs		
1a	Number of people to submit PhD thesis = 2	Daudet Andriafidison Radosoa Andrianaivoarivelo
1b	Number of PhD qualifications obtained = 0	
2	Number of Masters qualifications obtained = 4	Mahefa Ralisata Julie Razafimanahaka Félicien Randrianandrianina Tsibara Mbohoahy
3	Number of other qualifications obtained = 19	Course on pensions and payroll and a 5-day course on financial administration and budget management provided by NGO MANGO (UK), attended by Madagasikara Voakajy's Malagasy accountant GIS and GPS 8-day training for students and local partners Course on website design and management 5-day course on powerpoint and basic computing
4a	Number of undergraduate students receiving training = 1	Volana Rahaingodrahety
4b	Number of training weeks provided to undergraduate students = 12	Data collection, analysis, presentation
4c	Number of postgraduate students receiving training (not 1-3 above)	Irma Raharinantenaina Julie Razafimanahaka
4d	Number of training weeks for postgraduate students	Félicien Randrianandrianina Andrinajoro Rakotoarivelo Julie Razafimanahaka Mahefa Ralisata Noro Razafindrakoto
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (i.e. not categories 1-4 above) = 5	

Code	Total to date (reduce box)	Detail (←expand box)
6a	Number of people receiving other forms of short-term education/training (i.e. not categories 1-5 above) = 2	English language Victor Rakotomboavonjy Andriamana Rabearivelo
6b	Number of training weeks not leading to formal qualification = 12	Advanced acoustic monitoring course attended by Malagasy Darwin Assistant in USA Earthwatch Fellowship (South Africa) for one Malagasy Darwin Assistant Tropical Biological Association field courses (Uganda and Madagascar) attended by Malagasy Darwin Assistants
7	Number of types of training materials produced for use by host country(s) = 5	Teaching modules for primary schools designed for three age groups (4-7, 7-10, 10+) about bat conservation Two modules written for the REPC project on Malagasy bats and threatened species
Research Outputs		
8	Number of weeks spent by UK project staff on project work in host country(s)	Richard Jenkins (47 wks) Paul Racey (13 wks)
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s) = 4	Conservation survey of bats in three proposed new protected areas -Zahamena-Ankeniheny -Tsitongambarika -Mahavavy-Kinkony - Reserve Speciale de Cap Sainte Marie
10	Number of formal documents produced to assist work related to species identification, classification and recording = 0	
11a	Number of papers published or accepted for publication in peer reviewed journals 15: published 2: accepted	See publication list
11b	Number of papers published or accepted for publication elsewhere 1: published 3: accepted	See publication list

Code	Total to date (reduce box)	Detail (←expand box)
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	0
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	1: We provided a fruit bat database to the IUCN during the Global Mammal Assessment
13a	Number of species reference collections established and handed over to host country(s)	0
13b	Number of species reference collections enhanced and handed over to host country(s)	1: All bat specimens collected are curated in the national collection

Dissemination Outputs		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	5 workshops Bat conservation, April 05 Primary schools, x 3 @ Anoibe An'Ala
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2 conferences attended 1. UEA Madagascar Symposium (March 07). Two oral (including keynote address by P. Racey) and 1 poster. 2. SCB, Annual Conference Two oral.
15a	Number of national press releases or publicity articles in host country(s)	0
15b	Number of local press releases or publicity articles in host country(s)	0
15c	Number of national press releases or publicity articles in UK	1
15d	Number of local press releases or publicity articles in UK	0
16a	Number of issues of newsletters produced in the host country(s)	0
16b	Estimated circulation of each newsletter in the host country(s)	0
16c	Estimated circulation of each newsletter in the UK	0
17a	Number of dissemination networks established	0
17b	Number of dissemination networks enhanced or extended	0
18a	Number of national TV programmes/features in host country(s)	0
18b	Number of national TV programme/features in the UK	0
18c	Number of local TV programme/features in host country	Fanihy Cup Anosibe An'ala
18d	Number of local TV programme features in the UK	0
19a	Number of national radio interviews/features in host country(s)	1 Radio National Madagascar
19b	Number of national radio interviews/features in the UK	0

19c	Number of local radio interviews/features in host country (s)	2 Moramanga Radio Tsingy Radio Maintirano
19d	Number of local radio interviews/features in the UK	0
Physical Outputs		
20	Estimated value (£s) of physical assets handed over to host country(s)	
21	Number of permanent educational/training/research facilities or organisation established	1 Madagasikara Voakajy
22	Number of permanent field plots established	0
23	Value of additional resources raised for project	

17. Appendix III: Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database that is currently being compiled.

Mark (*) all publications and other material that you have included with this report

Type (e.g. journals, manual, CDs)	Detail	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
Journal*	Andriafidison, D. A., R. A. Andrianaivoarivelo, R. K. B. Jenkins, O. Ramilijaona, M. Razanahoera, J. MacKinnon and P. A. Racey. 2006 Nectarivory by endemic Malagasy fruit bats in the dry season. Biotropica 38, 85-90	Blackwell	*http://www.blackwell-synergy.com/doi/abs/10.1111/j.1744-7429.2006.00112.x*	$39
Journal*	Goodman, S. M., R. K. B. Jenkins and F. H. Ratrimomanarivo. 2005 A review of the genus *Scotophilus* (Chiroptera: Vespertilionidae) on Madagascar, with the description of a new species. Zoosystema. 27, 867-882	*Muséum national d'Histoire naturelle Service des Publications Scientifiques*	*http://www.mnhn.fr/museum/front/medias/publication/6897_z05n4a8.pdf*	38€
Journal*	Andriafidison, D., R., Andrianaivoarivelo, R. A. and Jenkins, R.K.B. 2006. Records of tree-roosting bats from western Madagascar. African Bat Conservation Newsletter 8, 5-6	Transvall Museum	*http://www.nfi.org.za/mammal/abcn/ABCN.htm*	Free
Journal*	Kofoky, A. F., Andriafidison, D., H. J. Razafimanahaka, Rampilamanana, R. L. and Jenkins, R. K. B. 2006. The first observation of *Myzopoda* sp. (Myzopodidae) roosting in western Madagascar. African Bat Conservation News 9, 5-7.			
Journal*	Andrianaivoarivelo, R. A , Ramilijaona, O., Andriafidison, D., R.,. 2007 *Rousettus madagascariensis* Grandidier 1929 feeding on *Dimnocarpus longan* in			

Journal*	Madagascar. African Bat Conservation Newsletter 11, 3-4. A. Rakotoarivelo and F. Randrianandrianina 2007. A chiropteran survey of Lac Kinkony Mahavavy area in western Madagascar. African Bat Conservation Newsletter 12, 2-5.			
Journal* Journal* Journal*	Goodman, S. M., F. H. Ratrimomanarivo and Félicien Randrianandrianina 2006. A new species of *Scotophilus* (Chiroptera: Vespertilionidae) from western Madagascar. Acta Chiropterologica 7, 867-882. Andrianaivoarivelo, R. A., N. Ranaivoson, P. A. Racey and R. K. B. Jenkins. in 2006. The diet of three synanthropic bats (Chiroptera: Molossidae) from eastern Madagascar. Acta Chiropterologica. 8, 439-444. Goodman, S. M., F. H. Ratrimomanarivo and F. H. Randrianandrianina. 2006. A new species of *Scotophilu*s (Chiroptera: Vespertilionidae) from western Madagascar. Acta Chiropterologica, 8: 21-37. Randrianandrianina, F. H., Andriafidison, D., Kofoky, A., Ramilijaona, O., Ratrimomanarivo, F., Racey, P. A. and Jenkins, R. K. B. 2006. Habitat use and conservation of bats in rainforest and adjacent human-modified habitats in eastern Madagascar. Acta Chiropterologica 8: 429-437	Polish Academy of Sciences	*http://www.miiz.waw.pl/periodicals/acta-chiropterologica/MIIZ-AC-6-001-012.pdf*	40€ subscription
Journal*	Goodman, S.M., Andriafidison, D., Andrianaivoarivelo, R., Cardiff, S.G., Jenkins, R.K.B. Kofoky, A., Mbohoahy, T., Rakotondravony, D., Ranivo, R., Ratrimomanarivo, F., Razafimanahaka, J., Razakarivony V. and Racey, P.A. 2005. The distribution and conservation of bats in the dry regions of Madagascar. Animal Conservation 8, 153-165	Blackwell	*http://www.blackwellpublishing.com/journal.asp?ref=1367-9430&site=1*	$39
Journal*	Jenkins, R. K. B., D. Andriafidison, J. H. Razafimanahaka, A. Rabearivelo, N. Razafindrakoto, R. H. Andrianandrasana, E. Razafimahatratra and P. A. Racey 2007. Not rare, but threatened: the Madagascar Flying Fox *Pteropus rufus* in a fragmented landscape. Oryx 41, 263-267.	Cambridge	*http://journals.cambridge.org/action/displayIssue?jid=ORX&volumeId=41&issueId=02*	$20

Journal*	Kofoky, A., D. Andriafidison, F. H. Ratrimomanarivo, J. H. Razafimanahaka, D. Rakotondravony, P. A. Racey and R. K. B. Jenkins 2007. Habitat use, roost selection and conservation of bats in Tsingy de Bemaraha National Park, Madagascar. Biodiversity and Conservation 16, 1039-153.	Springer	*http://www.springerlink.com/content/100125/*	$32
Journal*	Goodman, S. M., Rakotondraparany, F. and Kofoky, A. 2007. The description of a new species of *Myzopoda* (Myzopodidae: Chiroptera) from western Madagascar. Mammalian Biology 72, 75-81.	Elsevier	*http://www.elsevier.de/artikel/805098&_text=&_text=toc*	$30
	Rakotoarivelo, A.A., Ranaivoson, N., Ramiljaona, O., Kofoky, A., Racey, P.A. and Jenkins, R.K.B. Seasonal food habits of five forest microchiropterans in Madagascar. Journal of Mammalogy. In press.	Allen Press	*http://www.mammalsociety.org/pubjom/index.html*	$25
Journal*	Picot, M., Jenkins, R. K. B., Ramilijaoana, O., Racey, P. A., and S. M. Carrière. In press. The feeding ecology of *Eidolon dupreanum* (Pteropodidae) in eastern Madagascar. African Journal of Ecology.	Blackwell	*http://www.blackwellpublishing.com/journal.asp?ref=0141-6707*	$39
Journal*	O'Connor, T., Riger, P. and Jenkins, R. K. B. 2006. Promoting fruit bat conservation through education in Madagascar. International Zoo Educators Journal 42, 27-33.	International Zoo Educators' Association	*http://www.izea.net/education/journal2006.pdf*	Free

18. Appendix IV: Darwin Contacts

To assist us with future evaluation work and feedback on your report, please provide contact details below.

Project Title	Bat Conservation Madagascar
Ref. No.	EIDP10
UK Leader Details	
Name	Professor P.A. Racey
Role within Darwin Project	Month-long visit each year to give advanced training to Malagasy team members in the field, which includes personal discussions with all staff. Other duties include fund raising, reads all funding proposal, co-authors some publications, reads and comments on all outputs.
Address	School of Biological Sciences Zoology Building, Tillydrone Avenue, Aberdeen
Phone	
Fax	
Email	
Other UK Contact (if relevant)	
Name	Dr Richard Jenkins
Role within Darwin Project	Management of in-country activities, including training programs, project development, fund raising, scientific outputs to consolidate the project and sustain the Darwin legacy
Address	School of Biological Sciences Zoology Building, Tillydrone Avenue, Aberdeen And B. P. 5181 Antananarivo Madagascar
Phone	
Fax	
Email	
Partner 1	
Name	Dr Daniel Rakotondravony
Organisation	University of Antananarivo
Role within Darwin Project	Selection and supervision of Malagasy trainees. Acquisition research permits Member of the board of Madagasikara Voakajy
Address	Department of Animal Biology, University of Antananarivo, Madagascar
Fax	
Email	

LOGICAL FRAMEWORK (application)

21. Please enter the details of your project onto the matrix using the note at Annex 1 of the Guidance Note.

19. Project summary	**20. Measurable indicators**	**21. Means of verification**	**22. Important assumptions**
23. Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources	**24.**	**25.**	**26.**
27. Purpose To establish a national conservation organisation, specialising in bats, that is self-sufficient and maintains the Malagasy student training programme with research projects focussed on assessing forest dependency in bats and wider awareness raising activities	Public launch New legal status as NGO & board of advisors appointed Darwin Trainees engaged on bat conservation research projects Bats kept on the conservation agenda	Media coverage and legal documentation sent to Darwin Additional collaborations formed with new host-country partners Included in national biodiversity events as an NGO partner	Continued support of Malagasy staff Media interest Governmental approval Other NGOs accept us as a potential new partner The demand for trainees by this, and other organisations, does not outstrip availability Bat conservation is taken seriously and interest is matched by commitment
28. Outputs National Conservation NGO, for bats Student theses Bat conservation plans Education and awareness	Mission statement, website, brochure Students graduated Posters, interpretation boards and media coverage	All copies, recordings and photos sent to Darwin	Continued support from host-country partners in obtaining permission
29. Activities Establishing new NGO with sound financial management	**Activity Milestones (Summary of Project Implementation Timetable)** Yr 1: Change our legal status to NGO and to introduce a sound F&A system. Key staff to follow training courses. Launch of the new NGO with media coverage. Appointment of advisory board and first meeting held. Yr 2: The NGO active in bat conservation and participating at national, regional and local levels. Support given to local NGOs with an interest in bat conservation. Business plan produced, with host-country partners, to ensure long-term funding.		

Darwin Trainee and Assistant training and development programme	Yr 1: Training courses attended. Two Darwin Trainees to conduct DEA research. Darwin Assistant to undertake conservation research and contribute to training. Presentations given to interested parties.Yr 2: One Darwin Trainee to conduct DEA research and follow training course, more to follow with additional funding. Yr 1 students to defend theses and graduate.