



2/344

Submit by 21 January 2005

**DARWIN INITIATIVE APPLICATION FOR GRANT ROUND 13 COMPETITION:STAGE 2**

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

**1. Name and address of organisation**

<b>Name:</b> University of Cambridge	Old Schools, Trinity Lane, Cambridge CB2 1TS
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**2. Project title (not exceeding 10 words)**

Sustainable Insect Collecting and Farming in Papua New Guinea
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**3. Project dates, duration and total Darwin Initiative Grant requested**

<b>Proposed start date:</b> 1 <sup>st</sup> July 2005		<b>Duration of project:</b> 3 years			
<b>Darwin funding requested</b>	<b>Total (£) 177310</b>	<b>2005/6 (£) 56978</b>	<b>2006/7 (£) 83556</b>	<b>2007/8 (£) 28476</b>	<b>2008/9 (£) 8300</b>

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

The island of New Guinea contains thousands of insect species many of which are eagerly sought by international collectors. In Papua New Guinea 55% of the known butterfly species are endemics including the world's largest butterfly, *Ornithoptera alexandrae*. To meet market demand within CITES constraints, insect farming and trading has been carried out in PNG for the past 26 years, but little research has been done on its institutional structure, ecological impact or socio-economic effects. A three year project is proposed, with 3 main objectives – (i) Research into insect collecting/farming to establish the scale of exploitation by species and by province, and the scale and distribution of livelihood benefits; (ii) Capacity building for the two principle NGOs that are middlemen in this trade, Insect Farming and Trading Agency (IFTA) and Wau Ecology Institute (WEI); (iii) A workshop among all partners, including officials from the Department of Environment and Conservation (DEC) and biologists from UPNG, to discuss new policies and practices for the sustainable use of PNG's insect populations. This will allow all project partners to contribute to the development, agreement and adoption of a National Strategy for Sustainable Use of Insects. If we can fulfil these objectives then PNG's insect biodiversity will be better protected through improved policies and practices for the sustainable use of insects through commercial exports.

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

Details	Project Leader	Other UK personnel	Main project partner
<b>Surname</b>	Bayliss-Smith	Small	Warvi
<b>Forename (s)</b>	Tim P.	Rob D.S.	Esekia K.
<b>Post held</b>	Reader in Pacific Geography		Executive Manager
<b>Institution</b>	University of Cambridge		Insect Farming and Trading Agency
<b>Department</b>	Geography		University Development Consultancy (UDC)
<b>Telephone</b>			
<b>Fax</b>			
<b>Email</b>			

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

Yes. Ref. 327, Capacity Building for Biodiversity Conservation through Sustainable Use of Insects (pre-project funding), Dr T.P. Bayliss-Smith, March 2004, £3000.

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

**Aims (50 words)** Cambridge University's Department of Geography: aims to carry out research and teaching in geography, environment and development at highest international levels of excellence.

**Activities (50 words)**

Research and education of under- and postgraduate students at the highest international levels of excellence.

**Achievements (50 words)**

The Geography Dept. managed 65 research grants in 2002/03 with expenditures of over £1m. Research is published in international journals of the highest standard. Degrees are awarded to circa 100 undergraduates and circa 35 postgraduates per year. Staff members belong to a variety of international bodies.

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

**1. Insect Farming and Trading Agency (IFTA), Bulolo --** IFTA management assisted in the design of the project during the pre-project funding visit. In Lae, the University of Technology Board (which owns IFTA) also welcomes the project, and has written full support.

**2. Wau Ecology Institute (WEI), Wau –** WEI management has indicated full willingness to participate in the project during the pre-project funding visit. Mr Michael Hudson (Wau entomologist) is supportive.

**Agreed roles of IFTA and WEI –** (i) to collaborate in a research programme to review the PNG insect trade past and present, using purchasing records and interviews; (ii) building upon this review, to develop appropriate training programmes; (iii) to participate in a workshop to discuss new policies and practices for sustainable programmes; (iv) to contribute to the development, agreement and adoption of a National Strategy for Sustainable Use of Insects.

**3. Department of Environment and Conservation (DEC), Port Moresby –** DEC's Assistant Secretary, Mr. Barnabas Wilmott, has acknowledged DEC's need for a website, and welcomed collaboration with the project during the pre-project funding visit.

**Agreed role of DEC –** (i) to collaborate in a research programme, by providing data on the numbers of CITES species being exported; (ii) to assist and advise during the establishment of the DEC website; (iii) participate in a workshop to discuss new policies and practices for sustainable programmes, including future data requirements in order to meet CITES obligations; (iv) to contribute to the development, adoption and agreement of a National Strategy for Sustainable Use of Insects

**4. Department of Biology, University of PNG (UPNG), Port Moresby –** Prof. Lance Hill has promised research assistance and official affiliation, enabling the project to gain essential research/residence permits.

**Agree role of UPNG Department of Biology –** (i) help to develop 2 research projects on impacts of insect collecting/farming, supervised by a PNG biologist, and suitable for 2 PNG Honours students supported by the project; (ii) participate in a workshop, discussions to include priorities for ecological research; (iii) contribute to the development of a National Strategy for Sustainable Use of Insects.

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

During the pre-project funding trip interviews were conducted with insect farmers and collectors in the Wau/Bulolo area. The consultation process with such people in local communities will be extended during the lifespan of the project, as an important component of the field research.

## PROJECT DETAILS

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

Rob Small has previously investigated the uptake and success of insect farming and collecting in Papua New Guinea for his M.Phil thesis. This thesis was submitted as a component of the M.Phil in Environment and Development at Cambridge University (degree awarded September 2004). His fieldwork was funded by Rufford Small Grants for Conservation and the Royal Geographical Society. The research included an analysis of IFTA's purchasing records (from 1995 to 2002) and interviews with local insect collectors and farmers. This preliminary research work represents, in effect, a pilot study for the Darwin Initiative project. Our project is not to our knowledge being replicated by any other researchers.

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

In 1993 PNG ratified the *Convention on Biological Diversity 1992*, and is therefore committed to sustainable conservation outcomes. The PNG Government's Department of Environment and Conservation (DEC) is the CBD national focal point (alongside Foreign Affairs), and DEC will be one of the project's partners. By strengthening the capacity of (i) NGOs involved in insect farming/collecting, (ii) the PNG University's Department of Biology, and (iii) DEC itself, the project will (in relation to insect biodiversity) support Papua New Guinea's implementation of Articles 6 (15%), 7 (5%), 10 (20%), 11 (15%), and 12 (20%) of the Convention, with particular emphasis on the sustainable use and biodiversity theme (10%), economics trade and incentives theme (5%), and forest biodiversity theme (5%).

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

In addition to CBD, PNG is party to several international agreements aimed at conserving biodiversity, for example RAMSAR and CITES. Trade in endangered species is regulated under the *Fauna (Protection and Control) Act 1979*. By ratifying the CBD in 1993, the country is committed to sustainable conservation outcomes, and there have been attempts to incorporate conservation objectives into the *National Forest Plan* of 1996. For example logging permits now require the preparation and approval of environmental plans, and there is provision in the Plan for the establishment of forest reserves to protect biodiversity. Despite this, the timber industry has been widely criticised for failing to respect regulations, and the rate of rainforest habitat loss following logging has accelerated in the past 15 years.

All the endemic birdwing butterflies (*Ornithoptera* spp., *Troides* spp.) of PNG are included in CITES Appendix 2, so that export permits need to be approved by DEC. The exception is *Ornithoptera alexandrae* (the world's largest butterfly) which, being in CITES Appendix 1, cannot be exploited. More efficient monitoring of legal exports will be necessary if PNG is to meet CITES' sustainability criteria in future, and this will require research as well as agreement and cooperation among all stakeholders. The project is aimed at strengthening these particular aspects of the PNG insect trade.

Market conditions in the international trade in butterflies would be distorted by any breakdown of the system of CITES permits issued by DEC and by the collapse of NGOs that are licensed middlemen. In opposing this ongoing and emerging scenario, the current project aims to strengthen the institutions involved in the legal trade. Failing to intervene in this way will be seriously detrimental to conservation objectives.

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

The sustainable use of insects through insect farming and collecting in Papua New Guinea directly contributes towards sustainable livelihoods for rural Papua New Guineans. The research, capacity building, workshop, and national strategy development that this project aims to carry out or facilitate will directly affect the ease, efficiency and sustainability of insect farming and collecting. Enhanced livelihoods will in turn provide more incentives for conservation, and a discouragement to the illegal trade.

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

*Local* impacts on the partner NGOs (IFTA, WEI) will be achieved by capacity building through training programmes, support with IT skills and websites, and better cooperation with DEC; involvement by the University's Biology Department will be strengthened by project collaboration with staff and students. *National* impacts will follow from opportunities provided for better cooperation in sustainable use of insects (something conspicuously absent at present), and from the stakeholders participating in the production of a national strategy for sustainable use of insects, which might provide a model for other components of PNG's biodiversity. *International* impacts will result from publications in the international scientific literature.

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

More effective NGOs and a formalised and workable framework for insect trading and conservation will provide opportunities for all stakeholders to operate more successfully in future, thereby realising CBD objectives. DEC and the NGOs will also be able to advertise themselves more effectively via the internet, thereby attracting legal customers. If the NGOs become more viable, they will be in a better position to attract support from national and international sources, and this will counteract the unregulated insect traders and the illegal purchase of butterflies by tourists.

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

An important project objective will be the development of the National Strategy for Sustainable Use of Insects, based on agreed procedures and a long-term commitment by the various stakeholders who (with project support) will have cooperated to produce this document. The strategy should itself include the mechanisms and procedures that will permit continued collaboration in insect trading and its regulation. Meanwhile the skills of key actors will have been enhanced, so that they can more easily attract funding from international agencies and conservation bodies.

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

Websites and project publications will all feature the Darwin logo, which will also be locally publicised on training manuals, the project vehicle, T-shirts, etc. Seminar presentations and journal articles will acknowledge the Darwin Initiative.

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

The project has both training and development components. One training workshop will focus on the staff from IFTA and WEI. Staffing numbers are low enough to allow everyone to attend. Training manuals will be produced in both English and Pidgin English to allow those trained to revisit their training and to pass knowledge on to others. The IFTA & WEI training component will include basic level computer training (spreadsheets, word processing, databases, e-mail), curation and cataloguing of stored specimens, and customer service skills.

The second training workshop will be with DEC. The trainees will be DEC's CITES enforcement staff. Training manuals will be produced that enable the revisiting of training by trainees. The training will include intermediate computer training (spreadsheets, databases, website design and maintenance), record keeping and administration.

Follow-up sessions will be conducted 6 months and 12 months after each training workshop. These will allow monitoring of trainee outcomes and feedback from the trainees.

## LOGICAL FRAMEWORK

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

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; <u>and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources.</u>			
Project summary	Measurable indicators	Means of verification	Important assumptions
<b>Purpose</b> PNG's insect biodiversity better protected through improved policies and practices for the sustainable use of insects through commercial exports	1. <u>Knowledge</u> . <i>By end Yr 1</i> : new knowledge on insect <u>trading</u> by IFTA/WEI, and exports approved by DEC. <i>By end Yr 2</i> : new knowledge on social and economic benefits. 2. <u>Future policies and practices</u> . <i>By mid-Yr2</i> : Discussion and agreement among major stakeholders concerning future policies and practices.	<i>By end Yr. 1</i> : Project working papers <i>By end of Yr. 2</i> : Project reports. <i>By end of year 3</i> : Academic papers and draft of R.Small's Ph.D thesis  <i>By mid-Yr. 2</i> : Workshop proceedings. <i>By end Yr.2</i> : 'National Strategy for Sustainable Use of PNG's Insects' <u>written</u> , agreed and signed by stakeholders.	- PNG remains a country <u>with</u> freedom of travel by air and road, <u>so</u> fieldwork can be <u>done</u> in safety.  - <u>Our partner</u> NGOs <u>continue to be viable</u> .  - <u>UPNG</u> assists with project affiliation, staff input, student selection <u>and supervision</u> .  - DEC remains willing to share data and co-operate.
<b>Outputs</b> 1. Research into the sustainability of insect farming/trading and <u>how to improve it</u> . 2. Enhanced engagement by University of PNG in biodiversity/sustainable use issues. 3. Enhanced capacity of DEC.	1. <u>By Year 3: Research reports</u> on: (i) Insects traded by IFTA and WEI. (ii) Insects exported with <u>DEC permits</u> . (iii) <u>Income</u> benefits within PNG. 2. <u>By Year 2: Honours degrees</u> awarded to two PNG students. 3. <u>By end Yr. 1: DEC website</u> up and running.	Reports, academic papers, files of correspondence, data bases.  Honours theses  Website on internet.	- R. Small succeeds with <u>his Ph.D registration at Cambridge University</u> ; - <u>NGOs and DEC</u> remain co-operative research partners; - DEC continues to be an independent <u>and uncorrupt</u> department of PNG government; - Successful supervision arrangements <u>organised</u> for UPNG students.
<b>Activities</b>	<b>Activity milestones (summary of project implementation timetable)</b>		
<u>Field research programme</u>	Mar.06 [Yr 1]: report on insects traded and exported based on data collected from IFTA, WEI and DEC; Feb.07 [Yr 2]: UPNG students theses; Aug.07 [Yr 3]: reports on other insect traders and community benefits; Oct.07 [Yr 3]: draft of 1 <sup>st</sup> academic paper; Jun.08 [Yr 4] final report; Oct 08 [post-Yr 4]: Rob Small's Ph.D thesis submitted, drafts of 2 <sup>nd</sup> and 3 <sup>rd</sup> academic papers.		
<u>Capacity building</u>	Jul.06 [Yr 2]: revision of IFTA/WEI Training Manual; Sep.-Oct.06 [Yr 2]: training courses with NGO partners (IFTA, WEI); Nov.-Dec. 06 [Yr 2]: training course and website construction with DEC; Mar. 07 [Yr 2]: follow-up sessions on the training of partner staff.		
<u>Workshop and National Strategy agreement</u>	Jan.07 [Yr 2]: workshop among DEC, IFTA, WEI and UPNG stakeholders; Jan.07 [Yr 2]: discussion papers and consultation towards National Strategy for Sustainable Use of Insects; Feb.07 [Yr 2] signing of National Strategy agreement; Apr. 08 [Yr 4] review of implementation of National Strategy.		
<u>Dissemination</u>	Sep.05 [Yr 1], Sep.06 [Yr 2], Sep.07 [Yr 3], Sep.08 [post-Yr.4] newsletters and press releases in PNG; Jan.06 [Yr 1] and Jan.08 [Yr 3]: progress reports to Annual Symposia of Cambridge Conservation Forum.		

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

<b>Project implementation timetable</b>		
<b>Date</b>	<b>Financial year</b>	<b>Key milestones</b>
	Apr-Mar 2005/6 Apr-Mar 2006/7 Apr-Mar 2007/8	
7/05		Establish base in Madang
8/05		Liaise with DEC and UPNG
9/05		Work with IFTA in Bulolo
10/05		Work with WEI in Wau
11/05 to 12/05		Fieldwork to be conducted in insect farming/collecting communities (Madang and Morobe Provinces)
1/06		Work with DEC in Port Moresby
2/06		Finalise the UPNG student projects, and establish the students in the field in Wau/Bulolo area
3/06 to 5/06		Preliminary data analysis and report writing
6/06		Contingencies and local leave
7/06		Revision of IFTA training manual, and
8/06		Consultation about training courses, and production of training manuals
9/06		Training course with IFTA
10/06		Training course with WEI
11/06		Training course with DEC
12/06		DEC website online
1/07		Workshop, discussion papers and proceedings
1/07		National Strategy consultation, development and agreement
2/07		Submission of UPNG student's honours theses
2/07		Signing of National Strategy agreement
3/07		Follow up to training of IFTA, WEI and DEC staff
3/07 to 6/07		Continuation of fieldwork conducted in insect farming/collecting communities (East Sepik, Northern, North Solomons and Eastern Highlands Provinces)
7/07		Investigation of other insect-trading NGOs and the illicit sector
8/07		Production of research report
8/07 to 6/08		Production of academic papers and Ph.D thesis
4/08		Final visit to PNG to review progress on National Strategy, and finalise project reports
6/08		Submit final report to Darwin Initiative

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

PROJECT OUTPUTS		
Year/Month	Standard output number	Description (include numbers of people involved, publications produced, days/weeks etc.)
2005/08	15A	1 national press release in PNG
2005/12	12B	Completion of the enhancement of DEC's CITES II permit database
2006/01	14B	Cambridge Conservation Forum Annual Symposium
2006/07	10	Publication of a revised insect farming and collecting manual
2006/07	15A	1 national press release in PNG
2006/08	7	Production of one training manual for both IFTA and WEI training sessions and production of one training manual for DEC training sessions
2006/09	6A; 6B	Eight IFTA staff members trained in IT skills (basic level), curation and cataloguing and customer service skills; 3 training weeks
2006/09	16A; 16B; 16C	250 copies of newsletter to be produced; 200 in PNG; 50 in UK
2006/10	6A; 6B	Five WEI staff members trained in IT skills (basic level), curation and cataloguing and customer service skills; 3 training weeks
2006/11	6A; 6B	Three DEC staff members to be trained in IT skills (intermediate level), record keeping and administration; 3 training weeks
2006/11	15A	1 national press release in PNG
2007/01	14A	Sustainable Use of Insect Workshop to be attended by DEC, IFTA, WEI and provisionally by IUCN SSC SUSG Oceania Chairman
2007/02	3	BSc Hons degrees awarded to two UPNG students (Papua New Guinean)
2007/02	9	Agreement by all parties to National Strategy for Sustainable Use of Insects
2007/02	18A	1 news item planned on national PNG TV
2007/03	5	Completion of the continuous training of R.Small's PNG counterpart. Training will have been in research methods, I.T and Project Management
2007/09	16A; 16B; 16C	250 copies of newsletter to be produced; 200 in PNG; 50 in UK
2007/10	11A	1 paper to be submitted to a peer reviewed journal
2008/01	14B	Cambridge Conservation Forum Annual Symposium
2008/03	11B	1 paper to be published in peer reviewed journal
2008/04	15A	1 national press release in PNG
2008/06	8	R. Small to have spent 110 weeks in PNG T. Bayliss-Smith to have spent 13 weeks in PNG
2008/06	20	Project Vehicle handed over to host country – estimated value £5000
2008/06	21	Value of in kind contributions from IFTA and WEI £2000 Value of in kind contributions from Cambridge University c. £1000
2008/09	16A; 16B; 16C	250 copies of newsletter to be produced; 200 in PNG; 50 in UK
2008/10	1A	R. Small (British) to submit thesis for PhD qualification
2008/10	11A	2 papers to be submitted to peer reviewed journals
2009/01	1B	R. Small (British) to attain a PhD qualification
2009/03	11B	2 papers to be published in peer reviewed journals

## MONITORING AND EVALUATION

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

There are four groups of activities, and the milestones for each one are specified on page 6. Evidence for the achievement of those milestones will be reported to the Darwin Initiative and can be independently verified through project reports, newsletters, websites and seminar activities.

The four host country partners will be involved in the monitoring and evaluation process through feedback from the training courses, during the Sustainable Use of Insects Workshop, and in the follow up training that will take place 6 months after the initial courses.

