Submit by Monday 1 December 2008

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 16: STAGE 2

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

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

Name: Lancaster University	**Address:** Lancaster Environment Centre, Lancaster University, LA1 4YQ

2. Project title (not exceeding 10 words)

Linking research and environmental education to reduce Amazonian wildfires

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

Proposed start date: 01/09/2009	**Duration of project: 36 months**		**End date: 30/08/2012**		
Darwin funding requested	**2009/10 £29,356**	**2010/11 £93,415**	**2011/2012 £93,409**	**2012/13 £37,590**	**Total £253,770**

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

To reduce the prevalence of Amazonian wildfires by linking earth observation, biodiversity data, and social and ethnographic research with environmental education, training, and capacity building.

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

Details	**Project Leader**	**Other UK personnel (working more than 50% of their time on project)**	**Main project partner and co-ordinator in host country/ies**
Surname	**Barlow**	**Parry**	**Monteiro**
Forename (s)	**Jos**	**Luke**	**Raimunda**
Post held	**Lecturer**	**Post-doctoral researcher**	**Director of IDEFLOR**
Institution (if different to above)			**(Instituto de Desenvolvimento Florestal do Estado do Pará/Pará State Institute for Forestry Development)**
Department	**Lancaster Environment Centre**	**Lancaster Environment Centre**	**n/a**
Telephone			
Email			

Details	Co-ordinator in host country/ies
Surname	**Vieira**
Forename (s)	**Ima Célia Guimarães**
Post held	**Director**
Institution (if different to above)	**Museu Paraense Emílio Goeldi**
Department	**n/a**
Telephone	
Email	

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

Reference No	Project Leader	Title
15-028	**Paul Oldham**	Community Resource Management Planning in the Maichin River Valley, Chile

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)
The Lancaster Environment Centre (LEC) comprises staff from across the former University departments of Biological Sciences, Environmental Sciences and Geography. The main driving force in the formation of LEC was to produce a world-class centre for cross-disciplinary research, focussing on both fundamental and applied research tackling key environmental issues, including those associated with biodiversity and the impact of global change.

Activities (50 words)
Research is grouped within four inter-disciplinary themes: Organisms and the Environment (encompassing ecology and plant science); Environment and Society (addressing environmental social science research); Environmental Change and Pollution (covering ecosystem science; atmospheric science; chemical pollution; and environmental change); and Catchment and Aquatic Processes (covering hydrology; aquatic chemistry and catchment processes).

Achievements (50 words)
Total external funding for research by LEC staff exceeds £21M over the last 5 years, including a number of large cross-disciplinary consortia grants. Collectively, our staff have published >1000 papers during this same period, averaging ~2.5 peer-reviewed articles per year, including a number of high-profile papers in leading journals (e.g. Nature, Science, PNAS, etc.).

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

Partner Name: ***Dr. Raimunda Monteiro*** **IDEFLOR** **Instituto de Desenvolvimento Florestal do Estado do Pará/Pará State Institute for Forestry Development**	IDEFLOR (http://www.ideflor.pa.gov.br/) was created in 2007, and has responsibility for the management of 18 Million hectares of state owned forest in Pará. The "prevention and control of forest fires" is one of the key aims of sustainable forest management promoted by IDEFLOR, and the project will help them achieve this goal through training, capacity building, and the development of M&E and education programs. They will also assist with overall project coordination, and provide a direct link with Pará state government. Their involvement is important for guaranteeing the longevity of the project outcomes and will help ensure legacy.

Partner Name: ***Dr. Ima Vieira*** **MPEG** **Museu Paraense Emílio Goeldi** **Belém,** **Pará**	The Museu Goeldi (MPEG; http://www.museu-goeldi.br/) is the oldest research institute in the Brazilian Amazon, and has research expertise in many areas relevant to this project, including ecology, biology and anthropology. It runs an interdisciplinary Environmental Sciences MSc course, from which 4 students will be selected and integrated into the project. MPEG is also helping coordinate the biodiversity research that is feeding into the virtual landscape models, and will take a leading role in the identification of trees and lianas.

Partner Name: ***Dr. Kemel Kalif*** **University of Campinas & AVISAR**	AVISAR is a multi-institutional and multi-disciplinary project coordinated by the Brazilian agricultural agency EMBRAPA. It aims to understand the social, ecological and economic implications of cattle ranching systems across Brazil (http://www.avisar2.cnptia.embrapa.br/). AVISAR's involvement will be instrumental in facilitating the social research that is planned in areas dominated by cattle ranching (personal contacts with cattle ranchers are often essential for this kind of research). Dr. Kemel Kalif has recently led the development of a set of sustainability Criteria and Indicators to assess environmental performance standards for the cattle industry in Amazonia. The proposed project will develop methods for assessing landscape flammability that can be included alongside these performance indicators as part of future assessments of environmental standards. CV available at: http://lattes.cnpq.br/8403093663690397

Partner Name: ***André Lima*** **INPE** **Instituto Nacional de Pesquisas Espaciais/ Brazilian Institute of Space Research**	INPE (http://www.inpe.br/ingles/index.php) is the Brazilian Space Agency, and it is at the forefront of monitoring fires and land-use change in Amazonia (for example, see their live reporting of hot spots at http://www.cptec.inpe.br/products/queimadas/queimap_i.html). INPE collaborators will help map the timing and frequency of fires across our study areas, and Andre Lima will help construct the virtual landscapes. André Lima is being supervised by Dr. Yosio Shimabukuro, who has a long-history of research in this area. CV available at: http://lattes.cnpq.br/0464617687774083

Partner Name: *Dr. Toby Gardner*, Federal Univ. of Lavras (Brazil) and Cambridge University.	Toby Gardner is the PI on a large multi-institution project to evaluate trade-offs between land market values and biodiversity conservation opportunities in multiple landscapes in the Brazilian Amazon. This project is being coordinated by the Federal University of Lavras and the University of Cambridge and will involve partners and students from MPEG as well as non-governmental organisations in Brazil. The project will collect a detailed dataset of opportunity costs associated with different land-use systems (from pastoral systems through to selectively logged forest), coupled with fine-scale biodiversity data. This information will be highly complementary to the data collected on the proposed project, and will be used to further develop and enrich our work on virtual landscapes as a novel dissemination tool. CV available at: http://lattes.cnpq.br/9132836044066761

Partner Name: *Professor Mark A. Cochrane* Geographic Information Science Center of Excellence, South Dakota State University (SDSU), USA	South Dakota State University (SDSU) Geographic Information Science Center of Excellence (http://globalmonitoring.sdstate.edu/opportunities1.php) has expertise in geographic information science studies. This proposal builds upon the NASA funded work being co-ordinated by Mark Cochrane (SDSU) and Jos Barlow, that is developing a basin-wide spatial and temporal datasets of deforestation fires, maintenance fires, and forest fires, using MODIS and Landsat data. The project is also deriving regional estimates of biodiversity loss from fire from stratified field data collected for four separate taxonomic groups (woody plants, birds, dung beetles and ants).

9a. Have you consulted stakeholders not already mentioned above? ☒ **Yes** ☐ **No**
If yes, please give details:
We have conversed regularly with the IBAMA/Instituto Chico Mendes manager of the Tapajos-Arapiuns Extractive Reserve (Elildo Carvalho Jr), who was supportive of undertaking the social and environmental research with the subsistence farmers that live within the RESEX. Jos Barlow visited five of these communities in December 2006.

9b. Do you intend to consult other stakeholders? ☒ **Yes** ☐ **No**
If yes, please give details:

We will contact the cattle ranchers from the Marabá and Altamira regions of the state of Pará, through links with the AVISAR project and the University of Campinas.

9c. Have you had any (other) contact with the government not already stated? ☒ **Yes** ☐ **No**
If yes, please give details:
Luis Felipe Carvalho (Second Secretary, Political Sector, Embassy of Brazil, UK) attended a meeting organised by Jos Barlow (**Understanding large scale ecological patterns and processes in the Amazon: opportunities for learning and knowledge transfer in UK research**, Natural History Museum, October 29, 2008). As a result of this, Jos Barlow was invited to present an outline of the project to the Brazilian Ambassador Carlos Augusto Santos-Neves and the Second Secretary Luis Felipe Carvalho at the Brazilian Embassy in London on 24th of November 2008. The Ambassador was impressed by the approach of the project, and the fact it was focussed on finding solutions, including capacity building, and moved beyond highlighting environmental problems. He also demonstrated a keen interest in facilitating the dissemination of the project to the Federal Government.

9d. Is any liaison proposed with the CBD/CMS/CITES focal point in the host country? ☒ **Yes** ☐ **No**
If yes, please give details:
The project involves federal institutions such as MPEG. Furthermore, we will use the links with the Brazilian Embassy in the UK to disseminate outputs to the MMA (Environment Ministry).

PROJECT DETAILS

10. Please provide a Concept note (Max 1,000 words) (repeated from Stage 1, with changes UNDERLINED)

Rationale: Humid tropical forests, such as the Amazon, do not normally burn. However, wildfires have increased dramatically in extent and frequency in the Amazon basin over the last decade, due to the spread of anthropogenic activities that frequently involve fire, and recent severe droughts linked to climate change that increase forest flammability. Brazil's leading scientists recently described these accidental wildfires as one of the most important threats currently facing the Amazon (Nature News, 13 March 2008). At the local scale, forest fires have a profound and long-lasting effect on forest biodiversity, and reduce many non-timber forest resources important for maintaining sustainable livelihoods. They are also of enormous global significance, contributing to emissions of greenhouse gases, and undermining the viability of payments for Reduced Emissions from Deforestation and Degradation (REDD). Finally, fire can shift the Amazon to an alternative state of arrested regeneration. The resilience of Amazonian forests to abnormal droughts breaks down when fire is added to the system. Single low-intensity fires greatly increase the chance that a forest will burn again, and these recurrent wildfires have reduced pristine forest to areas of scrub vegetation with virtually no conservation or economic value.

Due to their pervasive and destructive nature, reducing the spread of wildfire may be the single most important step for safeguarding the future of the Amazon forest, maintaining forest resilience to climate change, and helping host nations meet their CBD commitments. Fire prevention will also help ameliorate climate change by reducing carbon emissions.

A number of factors contribute to the spread of wildfire in tropical forests. Some are ultimately global in nature (including climate change and recent agricultural expansion) and are extremely difficult for individual governments and regional stakeholders to tackle. However, **effective and immediate impacts on the spread of forest fires are possible by tackling the sources of ignition that stem from the activities of local farmers**. Relatively small changes to agricultural practice include altering the timing of burns in the dry-season, increasing investment in fire-breaks, and switching from fire-dependent to fire-sensitive agriculture (e.g. from slash-and-burn to agroforestry).

This project will use an interdisciplinary ecosystem approach to reduce the prevalence of Amazonian wildfires. It will achieve this by linking data from different disciplines and spatial scales (including earth observation, biodiversity data, and social, participatory, and ethnographic research) in order to develop effective environmental education, training, and capacity building. We will focus on the state of Pará, where fire is a major problem and where we have developed strong institutional ties during previous projects. The four major components are outlined below:

Social and environmental research: We will assess the social and environmental costs of wildfires, focusing on subsistence farmers and cattle ranchers. Previous burn history will be determined using **earth observation techniques** that measure the frequency, extent, and timing of fires (see in-kind support from *Mark Cochrane*). **Biodiversity data** will be collected in four regions, focussing on the birds, dung-beetles and trees. This component is coordinated by *Jos Barlow*, and the indicator taxa and methods are selected based on results from a previous DI project. Data on **human behaviour and attitudes to fire** will be gathered using two main social science research methods. We will use semi-structured interviews to gain a broad understanding of attitudes to fire, and agricultural practices across a broad spectrum of households and communities (coordinated & undertaken by *Kemel Kalif*, *Rachel Carmenta*, & *Luke Parry*). Ethnographic research methods (coordinated by *Saskia Vermeylen*) will be used to collect more detailed data at the community and individual level, examining fires as part of a wider livelihood strategy, how the use of fires has changed from generation to generation, and the symbolic and cultural value of fire. Ethnographic research methods will include participant observation, visual anthropology, collecting of life stories and semi-structured interviews and photo and oral diaries. Finally, these three principal outputs will be combined to develop a Geographical Information System (GIS) database used to **build virtual landscape scenarios** (coordinated by *Alan Blackburn* in conjunction with *André Lima*), allowing us to extrapolate data from relatively small spatial scales (e.g. biodiversity and ethnographic data) to the state of Pará, and develop future scenarios for regions where wildfires have yet to emerge as a significant issue.

Environmental education and public awareness: The project will produce three major outputs aimed at increasing environmental awareness in regions where fire is likely to become a major threat in the future. 1) An ethnographic film will show the social and environmental costs of fires in regions where they have already burned, and the positive action that can be taken to prevent this from happening; 2) a three-dimensional virtual landscape will provide a multi-scale representation of properties and regions, and use scenarios to demonstrate the social and environmental costs of failing to manage fires carefully; 3) a policy document presenting options and recommendations. These tools will be disseminated to rural property owners and subsistence communities in the state of Pará using a variety of techniques to maximise outreach, including visits by state government officials to rural areas, radio, film, internet, and targeted visits to key regions by host-country participants.

Capacity building for effective long-term monitoring: IDEFLOR was created in 2007, and manages 18 Million ha of forest in the state of Pará. It currently employs over one hundred staff, including experienced forest engineers and social scientists. However, IDEFLOR as a whole lacks a coherent framework to manage fire. This project will help IDEFLOR to develop a more accurate understanding of the causes of accidental wildfires, helping them develop environmental education programs, and, crucially, to use monitoring and evaluation to assess their effectiveness. In addition, we will empower local communities so they can undertake monitoring and influence and direct policies regarding fire management.

Training: The project will provide training for Brazilian MSc & PhD students, IDEFLOR staff, and local communities. Knowledge transfer will include specific skills in project management, geoinformatics, data-base management, social research methods, ethnographic techniques, and dissemination skills (including the role of film in social research methods and environmental education).

11a. Is this a new initiative or a development of existing work (funded through any source)? Please give details:

This is a new initiative, but it builds upon the work on the biodiversity consequences of fires being coordinated by Jos Barlow, and a previous Darwin Initiative project (12014) and a DI funded workshop (http://www.museu-goeldi.br/sobre/NOTICIAS/19_11_07_progrmacao_final.htm) which helped to develop the collaborative network.

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

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

We are not aware of any similar projects using our approach to reduce the prevalence of fires. Related works include the "Amazônia Sem Fogo" project (http://www.amazoniasemfogo.org.br/), which aims to promote agricultural crops and methods that do not depend on fire. The IBAMA scheme PREVFOGO (http://br.geocities.com/ibamapr/prevfogo.htm) attempts to reduce fire through enforcement of the Brazilian Forest Code. Our project is complementary to these projects, as the scale of the problem means it is impossible to find a single solution to the problem of fire - it is highly unlikely that Amazonian smallholders and cattle ranchers will stop using fire in the near future, while environmental education and knowledge transfer is complementary to the enforcement of environmental law. We will contact both projects to learn about their approaches, and how we can integrate our work and share positive outcomes.

12. Please indicate which of the following biodiversity conventions your project will contribute to: -
At least one must be selected.
- Only indicate the conventions that your project is directly contributing to.
- No additional significance will be ascribed for projects that report contributions to more than one convention

Convention on Biological Diversity (CBD)	☒ **Yes** ☐ **No**
CITES	☐ **Yes** ☒ **No**
Convention on Migratory Species (CMS)	☐ **Yes** ☒ **No**

What problem is this project addressing and how was it identified? (150 words)
This project moves beyond highlighting the negative biodiversity consequences of fires, and focuses on developing effective and sustainable solutions. It came about following discussions that took place during a Darwin Initiative funded workshop (http://www.museu-goeldi.br/sobre/NOTICIAS/19_11_07_progrmacao_final.htm), where leading Brazilian climate scientists and forest ecologists agreed that reducing the occurrence of wildfires would be the single most important means of increasing the resilience of the Amazon forest to ongoing anthropogenic and climate change. This is because many of the ongoing and predicted changes in the Amazonian climate increase the risk of fires spreading into forests. Large-scale forest clearance leads to reduced rainfall, while edge creation and selective logging increase the flammability of tropical forests. Climate change could be accompanied by increased air temperature and dry season length over large regions of the Amazon, and a probable increased frequency of severe seasonal droughts initiated by El Niño events and Atlantic sea surface temperature anomalies.

What will change as a result of this project? (150 words)
Although biomass burning is widely practised by virtually all rural people in the Amazon, it is also one of the few aspects of climate change mitigation and biodiversity loss over which humans retain some direct control. This project will assess the fire-use behaviour of rural peoples, and use participatory methods to work with local communities to develop ways in which they can minimise the risk of fire escaping into surrounding forests without affecting their livelihoods. This can be achieved through simple measures, such as encouraging the use of fire breaks, and changing the timing of fires so they do not take place when the surrounding forests are flammable. It will also establish mechanisms that can be used to evaluate the success of these environmental education techniques. This is crucial, as policy and management practices need to be adaptive if they are to have any chance of success.

Why is the project important for the conservation of biodiversity? (150 words)
Wildfires are a major threat to biodiversity. Even low-intensity fires (where flames rarely extend beyond 30cm in height) cause the mortality of over 40% of trees >10cm in DBH and extirpate many rare understory birds and the large primates. The negative consequences for biodiversity are often significantly worse than those brought about by other forms of forest degradation (such as selective logging or isolation of small forest patches). Furthermore, a positive feedback means forests that have burned once are much more likely to burn again, and low intensity fires are often the first step towards an ecosystem phase-shift from pristine closed-canopy primary forests scrub-like vegetation dominated by short-lived pioneer species. Much of this initial work on fires and tropical forest biodiversity has been conducted by Jos Barlow, and can be accessed at http://www.tropicalforestresearch.org/projects/tapajosI.aspx

How does this relate to one or more of the biodiversity conventions? (150 words)
This project has direct relevance to many of the principle CBD articles, including: Articles 6 (General Measures for Conservation and Sustainable Use), 7 (Identification & Monitoring), 8 (in-situ conservation), 10 (Sustainable use of Biological Diversity), 12 (Research & Training), 13 (Public Education & Awareness), 14 (Impact Assessment & Minimising Adverse Impacts) and 17 (Exchange of Information), 18 (Technical and Scientific cooperation). It will also address many of the Obstacles to the implementation of the convention on biological diversity (COP VI (2002, Appendix 1), and will help improve: 1b (Limited public participation and stakeholder involvement), 1c (Lack of mainstreaming and integration of biodiversity issues into other sectors), 1e (Lack of proactive measures), Most points in section 2 (Institutional, technical and capacity-related obstacles), 3d (Lack of public education and awareness at all levels). 5a (Lack of synergies at the national and international levels) and 5d (Lack of engagement of scientific community).

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

Previous experience of coordinating Darwin projects in Brazil suggests that this project will become very well known and strongly associated with the Darwin Initiative. This dissemination will be helped by the wide-range of national partners, and the overlapping networks that this project will have access to. These include AVISAR (http://www.avisar2.cnptia.embrapa.br/), which is beiong coordinated by EMBRAPA and involves over 24 governmental, non-governmental and academic institutions across the country; IDEFLOR, with over one hundred staff and links to both regional and national government; INPE, with access to Brazil's leading climate scientists and many other researchers; and MPEG, with many Amazon-focussed biologists, ecologists, and anthropologists, and the home for a new Centre of Excellence in research on biodiversity and the sustainable use of natural resources in the Amazon. We will deliver presentations to all partner organisations at different stages of the project. In addition, this project will develop important non-academic outputs, including films, radio, and the virtual landscapes. The Darwin name will be used in all peer-reviewed publication, popular science articles, media outputs, and in all press releases.

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

The long-term benefits to Brazil are threefold:

1) The project will help Brazil meet its CBD commitments, and will increase the viability of REDD payments.
2) This project will link institutions from the Amazon region with more established institutions from the south-east of Brazil; it will also link state government with the academic research community.
3) The establishment of learning portfolios and networks across communities in fire-prone areas will encourage the transfer of scientific and cultural knowledge across the Amazon, and help increase community resilience to ongoing and future environmental change.

Potential problems in achieving these aims are centred on the requirements for several groups to collaborate and contribute to the project. We will develop a sense of ownership and responsibility towards the project on the part of the project partners, the students being trained during the project, the communities with which we will engage, and the state government. With these groups we will (i) emphasise the importance of project objectives; (ii) highlight the achievements as the work progresses and (iii) demonstrate the valuable contributions of these groups in delivering these achievements, as well as the short and long-term value of the project outputs to each stakeholder group.

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

Given the scale of the problem, it would be highly unrealistic to expect this project to end wildfires in Amazonia. However, it will make many significant advances towards reducing their prevalence. At the end of the project, we expect to have developed a variety of tools and management strategies that can be taken forwards by partners. These include:

1) Integrating appropriate fire management practice into schemes developing certification of cattle ranching,
2) Establishing best practice for the use of fire by cattle ranchers and subsistence farmers,
3) Establishing best practice for the monitoring and evaluation of environmental education schemes,
4) Making media outputs (film and radio) permanently accessible via the internet following dissemination.
5) Developing the virtual landscape tools and making them both open-access and flexible, allowing additional information to be added in the future. Full training on their effective use will be given to IDEFLOR, MPEG and to AVISAR partners; Long-term use of these tools will be ensured through involving expert knowledge available within INPE.

Finally, all project partners are politically stable institutions (IDEFLOR, INPE, MPEG) or represent well established networks (AVISAR - http://www.avisar2.cnptia.embrapa.br/). We have developed a solid support base and are not reliant on particular individuals.

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

You should address each of these points.

Training will target MSc and PhD students based at institutions in Brazil, staff working for governmental bodies (IDEFLOR), and people living within rural communities. Academic training will be delivered through a mixture of well established supervisory methods as well as more practical skills training in the field.

We will run a short (1 week) field course in social science research methods in the region of Altamira, in conjunction with Dr. Kemel Kalif and Dr Raimunda Monteiro. This will teach the students and a number of IDEFLOR staff (i.e. those responsible for working with the agricultural sector) how to interact effectively with regional stakeholders (especially cattle ranchers and subsistence farmers). Community-based workshops will occur throughout the social fieldwork phase, and will be used to develop the ability of rural people to communicate their experiences of fire through different media, including film, radio and the written word. IDEFLOR staff will receive specific training on how to monitor the use and spread of fire in Amazonian landscapes (providing them with the ability to make use of expertise at national institutions such as INPE) as well as how to evaluate the effectiveness of education programs or changes in policy. Andre Lima will receive specific training on developing virtual landscape tools at Lancaster University, and will disseminate this knowledge to other partners when the tools are made open-access.

The effectiveness of training will be determined in different ways, depending on the focus groups. Academic training can be evaluated by the successful completion of degree schemes and publication of results. Training of IDEFLOR staff will be effective if they are able to interact with other national agencies, and plan and undertake the monitoring of fire and evaluate the effectiveness of education programs – and, crucially, pass on this information in the future and as the organisation develops.

LOGICAL FRAMEWORK

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: To help Amazonian countries meet their CBD objectives by reducing the spread of wildfires, thereby minimising biodiversity loss and helping maintain the resilience of tropical forests to climate and land-use change.	A reduction of wildfires, changes in agricultural practice, and an increase in environmental education schemes.	Earth observation data (satellite monitoring of the timing, frequency and location of fires). Monitoring of agricultural practices by Brazilian counterparts (both within governmental institutions, and within local communities).	[redacted]
Purpose: To reduce the prevalence of Amazonian wildfires by linking earth observation, biodiversity data, and social and ethnographic research with environmental education, training, and capacity building.	Measurable difference in attitudes and agricultural practice after environmental education. Training and capacity building achieved, and project partners able to undertake monitoring and evaluation of impact of environmental education.	IDEFLOR (Pará state forestry department) disseminates results, and undertakes monitoring and assessment of the effectiveness of the education program. Community based monitoring is undertaken.	Project partners are able to work together and communicate effectively IDEFLOR has the institutional capacity to implement the dissemination, education, and the monitoring of the results.
Outputs 1. Change in the attitudes and agricultural practices used by cattle ranchers	Social and environmental costs of fires are quantified for cattle ranchers Development of virtual landscape fire scenario package as policy tool. Development of ethnographic film showing the social and environmental costs of wildfires Development of Radio documentary demonstrating the social and environmental costs of wildfires	Data collected and available to partners Data compiled into GIS database Publications submitted 3D model developed Film available for dissemination Radio documentary available for dissemination	Farmers collaborate with social researchers through agreed links (AVISAR) Date collected is useful for building virtual landscapes – Virtual Landscape scenarios are interpretable by stakeholders. Farmers and smallholders collaborate with film project Smallholder communities collaborate with radio project

2. Change in the attitudes and agricultural practices used by subsistence farmers	Social and environmental costs of fires are quantified for subsistence farmers Development of virtual landscape fire scenario package Development of film showing the social and environmental costs of wildfires Development of Radio documentary demonstrating the social and environmental costs of wildfires	Data collected and available to partners Data compiled into GIS database Publications submitted 3D model developed Film available for dissemination Radio documentary available for dissemination	Farmers collaborate with social researchers through agreed links (AVISAR) Date collected is useful for building virtual landscapes Smallholder communities collaborate with film project Smallholder communities collaborate with radio project
3. Improved regional capacity to undertake environmental education and awareness programs and the subsequent monitoring and evaluation of their effectiveness.	Improved institutional capacity and in local government in the state of Pará (able to plan, undertake and monitor impact of environmental education). The establishment of learning portfolios/networks in communities in fire-prone areas.	State government undertakes education and monitoring program and makes results available. Local communities participate in the project, monitor their activities, and share results. .	State government maintains interest in project Communities are interested, and are willing to undertake monitoring.
4. Improved national capacity to undertake policy relevant social research, and disseminate it effectively	Improved expertise in undertaking social research, and coordinating and undertaking large-scale environmental education programs.	MSc students complete by end of project PhD student finishes by end of project Government and research institutions in Pará state continue to work with INPE (Brazilian space agency) and University of Campinas.	Students are integrated into project structure and complete their course Institutions in Pará and those in the south-east of Brazil are willing to work together.

Activities (details in workplan)

1.1 Social and environmental costs of fires for cattle ranchers assessed
1.2 Virtual landscape fire scenario package developed for regions dominated by cattle ranching
1.3 Production of ethnographic film showing the social and environmental costs of wildfires in regions dominated by cattle ranching
1.4 Production of Radio documentary demonstrating the social and environmental costs of wildfires in regions dominated by cattle ranching
2.1 Social and environmental costs of fires for subsistence farmers assessed
2.2 Virtual landscape fire scenario package developed for regions dominated by subsistence farmers and extractivists
2.3 Production of ethnographic film showing the social and environmental costs of wildfires for subsistence farmers and extractivists
2.4 Production of Radio documentary demonstrating the social and environmental costs of wildfires for subsistence farmers and extractivists
3.1 Field course in Altamira for IDEFLOR staff and students to improve capacity to engage with cattle ranchers.
3.2 Community-based workshops conducted in Extractive Reserves and establishment of learning portfolio.
3.3 Training of IDEFLOR staff in (a) techniques that can be used to monitor and evaluate fires, and (b) environmental education techniques, including use of virtual landscape tools
3.4 Integration of a coherent fire policy into certification schemes for cattle ranching.
4.1 Research undertaken and students achieve qualifications.

Monitoring activities:
Indicators for 1 & 2. Social and environmental research is undertaken, virtual landscape fire scenarios tool is produced, and film and radio outputs are completed.
Indicators for 3. Training courses take place and enhance capacity in IDEFLOR. Community-based workshops take place.
Indicators for 4. Publications and qualifications available.

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

	Activity	Months	Year 1				Year 2				Year 3			
			1	2	3	4	1	2	3	4	1	2	3	4
1.1	Social and environmental costs of fires for cattle ranchers assessed				X	X	X	X	X	X				
1.2	Virtual landscape fire scenario package developed for regions dominated by cattle ranching							X	X	X	X			
1.3	Production of ethnographic film showing the social and environmental costs of wildfires in regions dominated by cattle ranching								X	X	X	X	X	
1.4	Production of Radio documentary demonstrating the social and environmental costs of wildfires in regions dominated by cattle ranching								X	X	X	X	X	
2.1	Social and environmental costs of fires for subsistence farmers assessed		X	X	X	X	X	X						
2.2	Virtual landscape fire scenario package developed for regions dominated by subsistence farmers and extractivists							X	X	X	X			
2.3	Production of ethnographic film showing the social and environmental costs of wildfires for subsistence farmers and extractivists								X	X	X	X	X	
2.4	Production of Radio documentary demonstrating the social and environmental costs of wildfires for subsistence farmers and extractivists								X	X	X	X	X	
3.1	Field course in Altamira for IDEFLOR staff and students to improve capacity to engage with cattle ranchers.		X											
3.2	Community-based workshops in Extractive Reserves and establishment of learning portfolio.				X		X							
3.3	Training of IDEFLOR staff in (a) techniques that can be used to monitor and evaluate fires, and (b) environmental education techniques, including use of virtual landscape tools.											X	X	X
3.4	Integration of a coherent fire policy into certification schemes for cattle ranching.								X	X	X			
4.1	Research undertaken and students achieve qualifications.		X	X	X	X	X	X	X	X	X	X	X	X

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

Standard Measure No	Description	Tick if Relevant
1A	Number of people to submit thesis for PhD qualification (in host country)	1
1B	Number of people to attain PhD qualification (in host country)	1
2	Number of people to attain Masters qualification (MSc, MPhil etc)	4
3	Number of people to attain other qualifications (ie. Not outputs 1 or 2 above)	
4A	Number of undergraduate students to receive training	
4B	Number of training weeks to be provided	
4C	Number of postgraduate students to receive training	5
4D	Number of training weeks to be provided	3
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)	10
6B	Number of training weeks to be provided	6
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country	3
8	Number of weeks to be spent by UK project staff on project work in the host country	72
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country	2
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	
11A	Number of papers to be published in peer reviewed journals	12
11B	Number of papers to be submitted to peer reviewed journals	12
12A	Number of computer based databases to be **established** and handed over to host country	1
12B	Number of computer based databases to be **enhanced** and handed over to host country	
13A	Number of species reference collections to be **established** and handed over to host country(ies)	
13B	Number of species reference collections to be **enhanced** and handed over to host country(ies)	
14A	Number of conferences/seminars/ workshops to be **organised** to present/disseminate findings	3
14B	Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated.	10
15A	Number of national press releases in host country(ies)	2
15B	Number of local press releases in host country(ies)	4
15C	Number of national press releases in UK	2
15D	Number of local press releases in UK	2
16A	Number of newsletters to be produced	
16B	Estimated circulation of each newsletter in the host country(ies)	
16C	Estimated circulation of each newsletter in the UK	
17A	Number of dissemination networks to be **established**	
17B	Number of dissemination networks to be **enhanced/ extended**	
18A	Number of national TV programmes/features in host country(ies)	1
18B	Number of national TV programmes/features in UK	
18C	Number of local TV programmes/features in host country(ies)	1
18D	Number of local TV programmes/features in UK	1
19A	Number of national radio interviews/features in host county(ies)	2
19B	Number of national radio interviews/features in UK	1
19C	Number of local radio interviews/features in host country(ies)	2
19D	Number of local radio interviews/features in UK	2
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	6000
21	Number of permanent educational/training/research facilities or organisations to be established and then continued after Darwin funding has ceased	
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work	>£233,725

PROJECT BASED MONITORING AND EVALUATION

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

Many of the main activities and outputs are in the form of tangible products such as new research (Activities 1.1 and 2.1), the production of virtual landscapes tools (Activities 1.2 and 2.2), film or radio (Activities 1.3, 1.4, 2.3, 2.4) and academic qualifications (Activities 4.1). These will provide a strong basis for measuring progress towards the main project purpose. This project will be carried out in close collaboration with partner organisations, which all undertake their own independent monitoring of progress. However, in addition to this (and because of the number of project partners and the different components) we will also monitor progress following the project implementation timetable, making sure each stage of the project is on schedule and ready to integrate with the other parts when necessary.

FUNDING AND BUDGET

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

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

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

The University received funding from the Government in the form of a block grant from the Higher Education Funding Council for England. The block grant covers teaching and a portion of the block grant forms part of the dual funding mechanism for quality related research. A copy of the most recent annual report and accounts can be found at the following link.

http://www.lancs.ac.uk/depts/finance/Finstat%2048-89.pdf

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

Confirmed:
NERC-ESRC studentship
IDEFLOR staff costs
MPEG staff costs
UNICAMP staff costs
MPEG MSc studentships
Lancaster University overheads and staff costs

Unconfirmed:
Lancaster University FST studentship

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

Financial resources:
This project will also have direct access to biodiversity and remote-sensing data collected during a $1.1 million NASA project and a £77,000 NERC project.

Funding in kind:

FCO NOTIFICATIONS

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

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

Yes (no written advice) ☒ **Yes, advice attached** ☐ **No** ☐

CERTIFICATION 2009/10

On behalf of the trustees* of Lancaster University

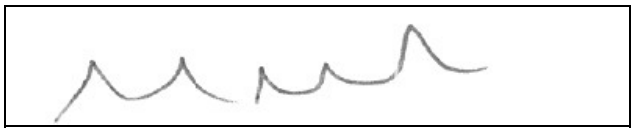
(*delete as appropriate)

I apply for a grant of **£253,770** in respect of expenditure to be incurred in the financial year ending 31 March 2010 on the activities specified in the above application.

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

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

Name (block capitals)	Mr Andrew Neal
Position in the organisation	Director, Finance and Resources Division

Signed  **Date:** 28/11/2009

Stage 2 Application - Checklist for submission

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

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

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