



# Darwin Initiative Annual Report

## Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders:  
it is expected that this report will be about 10 pages in length, excluding annexes



**Submission Deadline: 30 April 2012**

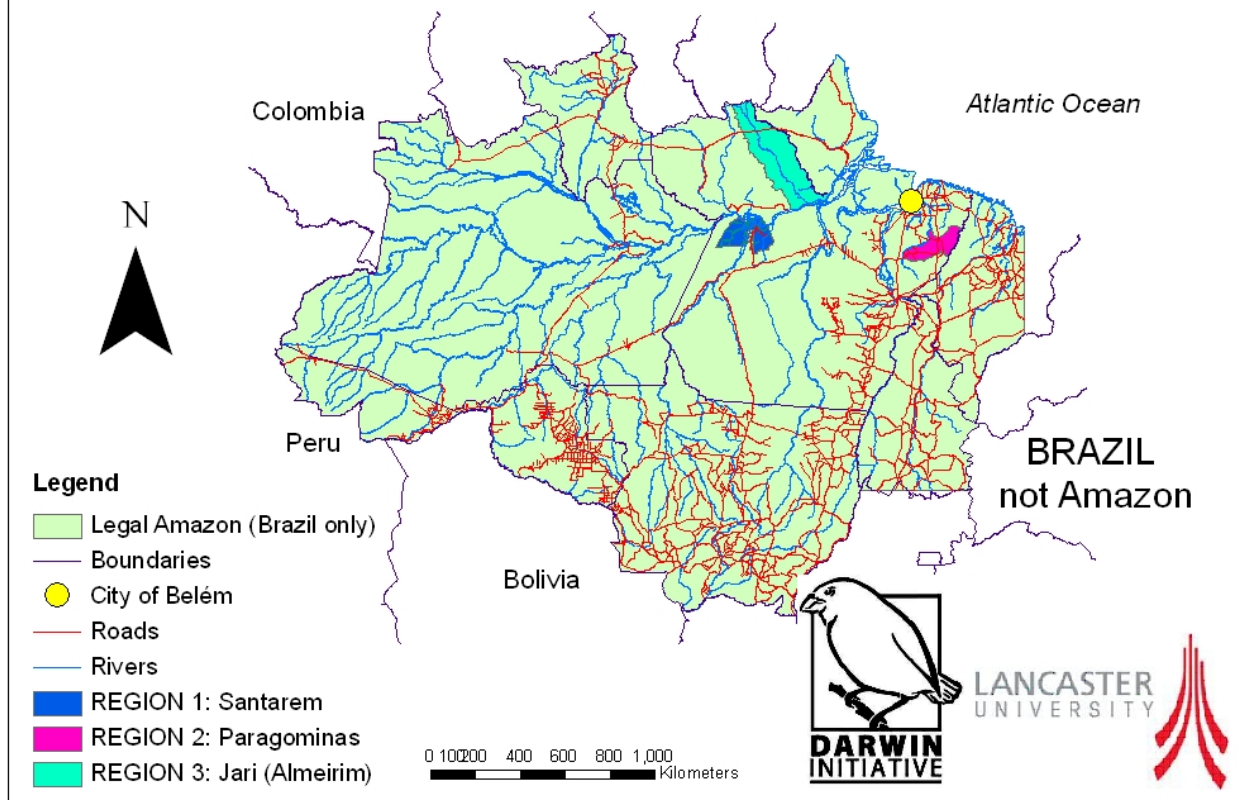
## 1. Darwin Project Information

Project Reference	17-023
Project Title	Linking research and environmental education to reduce Amazonian wildfires
Host Country/ies	Brazil
UK contract holder institution	Lancaster University
Host country partner institutions	Museu Goeldi, Belém
Other partner institutions	Embrapa (Brazilian Agricultural Development Agency), Belém
Darwin Grant Value	£253,770
Start/end dates of project	01/09/2009 – 28/02/2013 (extended from 31/08/2012)
Reporting period	May 2011 to April 2012 (Annual Report 3)
Project Leader name	Dr Jos Barlow
Project website	<a href="http://www.tropicalforestresearch.org/projects/humansandwildfires.aspx">http://www.tropicalforestresearch.org/projects/humansandwildfires.aspx</a>
Report authors, main contributors and date	Dr Jos Barlow, Dr Toby Gardner, Dr Luke Parry, Dr Ima Vieira, Dr Joice Ferreira. 26/04/2012

## 2. Project Background

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, unmanaged selective logging which dries the understory and increases fuel loads, and recent severe droughts linked to climate change that increase forest flammability. In this project we are assessing the social and environmental costs of wildfires, focusing on subsistence farmers and cattle ranchers. This is taking place in three regions of the eastern Brazilian Amazon (Fig. 1), each of which has experienced significant levels of deforestation and increased frequency of forest fires. The three regions – Santarém, Paragominas and Jari - have unique histories of colonisation and agricultural development, allowing us to address our project objectives for a range of contexts and diverse stakeholders.

**Linking research and environmental education to reduce Amazonian wildfires:  
Three study regions in Pará State**



**Figure 1.** Location of study regions in the Brazilian Amazon. (See Annex for more detailed maps of study regions).

### 3. Project Partnerships

The institutions (in addition to Lancaster University):

- Museu Paraense Emílio Goeldi (MPEG) Belém, Brazil  
*[The Goeldi Museum]*
- Empresa Brasileira de Pesquisa Agropecuária (Embrapa), Belém, Brazil  
*[Brazilian Federal Agricultural/Forestry Research Institute]*
- Grupo Orsa, Monte Dourado, Brazil.  
*The company includes a plantation forestry sector (Jari Celulose), sustainable logging sector (Orsa Florestal) and a community engagement/development sector (Fundação Orsa).*
- Universidade Federal do Pará (UFPA), Belém, Brazil  
*[Federal University of Pará]*
- Instituto do Homem e Meio Ambiente da Amazônia (IMAZON), Belém, Brazil  
*[Amazon Institute for Man and Environment]*
- Instituto de Desenvolvimento Florestal do Estado do Pará (IDEFLOR), Belém, Brazil  
*[Pará State Institute for Forestry Development]*
- Instituto Nacional de Pesquisas Espaciais (INPE), São José dos Campos, Brazil  
*[The Brazilian Space Agency]*

Plus additional partners, as outlined in the text below.

## **Describe the partnership between the UK lead institution and host country partner(s) and how this has developed over the last year.**

We have had a very productive and successful 12 months thanks to the continued growth in our collaborations with Brazilian institutions. Our already considerable research network was further consolidated in June 2011 when we organized and ran a three day workshop with partners in Campinas, Brazil ([http://saturno.museu-goeldi.br/inct/index.php?option=com\\_content&view=article&id=98&Itemid=57](http://saturno.museu-goeldi.br/inct/index.php?option=com_content&view=article&id=98&Itemid=57)).

Our relationship with our lead institutional partner, the Goeldi Museum in Belém, Brazil, remains very strong. We have worked closely with our principal Goeldi partner, Dr Ima Vieira the former Director of the museum. Over this reporting period Dr. Vieira has been instrumental prioritizing the fire research agenda in the Brazilian Amazon. Building on our work in agricultural and forestry contexts Dr. Vieira has initiated a complimentary and important research project on the impacts of bio-fuel expansion in Amazonia for fire management and wildfires. She has recruited our recently graduated MSc student Amanda Estefania to coordinate the fieldwork on this project. Dr Vieira has also worked tirelessly to maintain and improve links between the Goeldi Museum and the UK. In particular she has led our efforts to participate in Brazil's landmark "Science Without Borders" initiative in which the federal government is investing heavily in international research links and scientific exchanges. To this end, she has proposed Dr Barlow as a medium-term (3 years) senior visiting scientist to the Goeldi Museu, furthering our fire research and impact across different sectors in Brazil. Second, she has secured a funded studentship for a promising Brazilian scientist to undertake her PhD in Lancaster University, in association with the Goeldi Museum. Our chosen candidate hopes to begin in October 2012 and will work on advancing the findings of this Darwin Project and ensuring project legacy

We are also pleased to report that our second key partnership, with the Brazilian federal agricultural research agency, Embrapa, remains very strong. Our lead partner, Dr Joice Ferreira, was instrumental in securing us facilities, and server hosting for the critical socio-economic data input stage of the project. A team of six young Amazonian researchers (four of who had been involved in fieldwork) spent six months entering questionnaire data into a custom-made database that is hosted by Embrapa. Dr Ferreira was also awarded a year's sabbatical to be fully engaged in the data analysis of project work. She is based in the University of Cambridge though makes frequent visits for meetings in Lancaster University. This interaction has contributed to Dr Ferreira's increasing profile in Brazilian environmental science and policy (see Ferreira et al, in press, in outputs).

Our partnership with the Federal University of Pará has centred on the MSc courses of our sponsored project students. Since their course has now ended (see below) the frequency of our linkages with UFPA has become less frequent. However, we are hopeful of closer collaboration on analysis and future fire research with Dr Sergio Riveiro of the economics department. As described in 4.1, we have also dedicated efforts to supporting our Amazonian students and researchers to access premier postgraduate training elsewhere in Brazil. We had close contact this year with students from a small regional centre of the University, in Paragominas where we supervised two undergraduate students on fire-related dissertations (see 4.1).

Our partnership with the University of Sao Paulo is centred on the doctoral research of Thiago Morello. He has adopted Amazonian wildfires as the main theme of this PhD research and has been a crucial member of our research team. We have assisted him (and due to his own hard work) in gaining a place on the Latin American and Caribbean Environmental Economics Program. Thiago is building on skills and advice gained in Panama and spending a month in Lancaster University (May 2012) to work on data analysis from our Darwin Initiative fire dataset.

As reported in our previous Annual Report, our partnership with the Pará State forestry service (IDEFLOR) halted some time ago due to political reorganization of the institution and it has not yet been possible to re-engage fully with them. However, as noted in Report 2, we negotiated a successful transition to include Embrapa as our second main Brazilian partner, instead of IDEFLOR.

Our partnership and collaboration with the Brazilian National Space Agency (INPE) is still healthy, though is occasional rather than constant. Over the past year we benefited from the presence of an INPE anthropologist (Dr Roberto Araujo) at our workshop in Campinas (June 2011) and also discussed our analytical plans and data sources with modelling specialist Dr Manoel Cardoso, in Pucallpa, Peru (see events attended). In addition we have developed a productive partnership with Dr. Luiz Aragão from the University of Exeter and a visiting researcher at INPE to analyse in more detail the biophysical impacts of wildfires in the Amazon.

### Additional partnerships:

1. We have continued our work with the NGO, Imazon (Amazon Institute for Man and Environment). They provided training on detecting fire scars in Landsat images to L Parry and T Gardner in May 2011. They are funding a PhD in Lancaster University for their employee, Samia Nunes with support from the Porticus Foundation. Samia starts her PhD in May 2012 and will be assessing the potential of remote sensing products to explore the interface between wildfires and secondary forest regeneration in human-modified landscapes of the eastern Amazon.
2. We have worked with Tania Cypriano (Viva films, <http://www.taniacypriano.com/>) to successfully produce films that explore the social and environmental dimensions of slash-and-burn agriculture and transitions to fire-free agriculture in Amazonia (see outputs). Encouragingly, Ms Cypriano worked closely with local film-makers in Santarém to shoot fire scenes and depended heavily on the participation and self-directed filming of rural farmers. She and her team are in the final stage of editing high definition youtube versions of the short films on different aspects of fire-use and agriculture and transitions to fire-free agriculture. These will be disseminated on the project website in the coming months.
3. Regular contact has been maintained with our forestry industrial partners, Grupo Orsa (Region 3). Our next steps will be to present our more recent research findings to them (based on Amanda Estefania's MSc research) and attempt to begin the process of using the findings to improve the fire avoidance strategies of their smallholder-plantation forestry program.
4. We have maintained occasional contact with small and large producer organizations in Santarém and Paragominas. One of our goals in the next year is to engage more closely with them during the process of sharing and discussing our research findings.
5. We have strengthened links with researchers working for the French government agricultural agency, CIRAD. Our main colleagues there are Dr Emilie Coudel, an agronomist, and Dr Driss Ezine de Blas, an economist. We are working together on data analysis, focussing on using their skills in understanding farmer compliance with environmental regulations (Coudel) and developing a typology of rural producers (de Blas). Dr. Parry aims to link with more CIRAD researchers in Montpellier, France in May 2012 during the 13th International Congress on Ethnobiology
6. IPAM (Institute of Amazonian Environmental Research; <http://www.ipam.org.br/>). We have developed a very promising collaboration with Dr Ane Alencar, a highly respected fire scientist now working for this NGO. Dr Alencar has developed an innovative new method of detecting fire scars using Landsat images. Particularly interesting is that fire is reliably distinguished from selective logging using a processing algorithm known as CLAS-BURN. We anticipate receiving processed information for our study landscapes in May 2012. This will allow us to determine whether transitions to fire-free agriculture amongst small-holders have led to reduced wildfires.
7. Federal University of Viçosa (UFV), Brazil. We have developed a growing relationship with land economists from UFV, to further advance the economic analyses of our data, related to land-use change (to a larger extent) and fire (to a lesser extent) with the Dr Sebastien Marchand, Dr. Denis Cunha and Dr. Marcelo Braga. We (together with the environmental-economic trade-off sister project, ran by Dr Gardner, Cambridge) recruited Dr Marchand, a talented young French land economist. Our collaborators at UFV secured Brazilian research funding to pay for Dr Marchand's postdoctoral salary until 2014.
8. The Institute for Applied Economic Research (IPEA), Rio de Janeiro, Brazil. In partnership with the sister project on environmental-economic trade-offs we have developed a productive relationship with Dr. José Ferés, a leading econometrician in Brazil. Dr .Ferés will work in close partnership with colleagues at UFV (see previous) to developed tailored modelling solutions for understanding land-use decisions for the Santarém and Paragominas study regions.
9. The Nature Conservancy (TNC), Amazon Program, Belém, Brazil. TNC has been responsible for coordinating state-wide efforts to map and register rural properties into the Pará rural environmental land registry (Cadastro Ambiental Rural, CAR), with both Santarém and Paragominas as acting as flagship municipalities in these efforts. We have worked closely with TNC to develop partnerships with farmers working to improve compliance with environmental regulation as part of our research network, and in addition are collaborating with TNC to help advise on mirco ecological-economic zoning work in the municipality of Paragominas and Municipio Verde initiative.

## Project management structure

As indicated in Annual Reports 1 and 2, we developed the project in close collaboration with Dr Toby Gardner, who was a full-time NERC research fellow at the University of Cambridge, and is responsible for leading a project investigating the environmental-economic tradeoffs among Amazonian agricultural systems. As stated, we worked closely with Dr Gardner and Dr Ferreira (Embrapa) in developing the project design and data collection in Regions 1 and 2. L Parry was responsible for the day-to-day management of this Darwin project. Dr Parry secured a lectureship at Lancaster University, starting in November 2011, and this prompted a change in management structure. With collaboration and support from the DI, Dr Gardner moved into the postdoctoral post (half-time) left vacant with the change in role of Dr Parry, thereby further strengthening and consolidating the links between our work on fire and the related research on land-use trade-offs in the same study regions. Dr. Parry is still closely involved with the project though was no longer able to dedicate the majority of his time due to new additional responsibilities. Overall, Dr Gardner is now managing the project, with assistance from Dr Parry, Dr Barlow and Dr Ferreira (Embrapa).

## **Describe any partnerships with other UK or Regional partners and how these partnerships have supported the project.**

As explained above, our links with Cambridge University have become ever stronger due to the transition of Dr Gardner from project collaborator, to DI co-investigator/manager. We have also continued to work closely with Dr Diana Weinhold from the London School of Economics (LSE). Encouragingly, Thiago Morello, the Brazilian PhD student now working on fire management economics, will spend several months at LSE with Dr Weinhold during 2013.

## **Does the project have a link with the CBD focal point?**

This project will help Brazil meet its CBD commitments by reducing the potential loss of biodiversity caused by forest fires. However, these benefits are not easily measurable during the timescale of this project. Nevertheless, through the network of collaborations and partnerships we have established with public institutions, Brazilian universities and private sector companies (both forestry and agricultural) we are already increasing awareness of the potential costs of fires to Amazonian forests and society. The project has led to formal capacity building through the undergraduate and postgraduate students that we have supported and informal capacity building through the dialogue and data collection components of the research that have now been successfully completed. Between August and October 2011 Dr. Gardner worked closely with the CBD as part of the collaborative agreement between the CBD and the International Tropical Timber Organisation (ITTO) to help design a capacity building program for forest management professionals in all eight Amazonian countries. Key aspects of this training program were informed directly by the findings and experiences of work on the Darwin Initiative project.

## **4. Project Progress**

See commentary under specific activities below. In summary, we have successfully completed data collection, data input and quality control and have a superb team in place for imminent phase of data analysis and preparation of scientific outputs.

### **4.1 Progress in carrying out project activities**

#### ***Activities (1.1) Social and environmental costs of fires for cattle ranchers assessed, and (2.1) Social and environmental costs of fires for subsistence farmers assessed***

Data collection was completed in June 2012. We have comprehensive assessments of fire management practices, escaped fires, fire damage (to forest and farm infrastructure etc) and producer well-being measures from 496 properties (and 598 household surveys) from our main sampling regions (1 and 2), 39 interviews on fire (using comparable methods) from Region 3 (forestry matrix) and 178 interviews using comparable methods from extractive reserves on the Rio Arapiuns. Thus we have a total sample of 713 farms. All data has been checked for errors, and entered into a bespoke MySQL database using an internet interface. Data entered has also been checked and corrected. We will commence statistical analyses in May 2012.

We have also carried out 18 semi-structured interviews with key stakeholders in Study Regions 1 and 2. We interviewed diverse members of local government (departments of agriculture, environment) and federal government agencies, as well as producer organizations. We were seeking to identify incentives and barriers to the adoption of fire-free agriculture in the Amazon region. All interviews have been transcribed.

#### **4.1 Research undertaken and students achieve qualifications.**

We dedicated considerable time to supporting the projects' Brazilian MSc students (Amanda Estefania and Carla Daniele Furtado) to develop their theses. One student handed in on-time and received an exceptionally high mark (9/10) for her project on smallholder forestry and fire hazard. The quality of her research was judged as exceptional by the very well-respected panel (consisting of a climate scientist, an environmental economist and a rural sociologist). Unfortunately our second MSc student experienced significant personal problems in December 2011 and has been granted until July 2012 to hand in her thesis.

Our two undergraduate research students (Amanda Cardoso and Fatima Santos Lopes) have both successfully defended their dissertations (both on the flammability of degraded forests) and received their degrees from the State University of Pará. We continued to invest (time and supervision) in the educational futures of two project assistants, Karoline Goncalves and Alessandra Gomes. We set aside two days a week for both individuals to prepare for MSc entrance exams in Belém though unfortunately neither was successful for the 2011 entry. We have also invested significantly in another project assistant, Heloisa Correia, with the aim of maximizing her chances of entering one of Brazil's top Universities, UNICAMP. We have secured her a stipend until October 2012, via support from the Goeldi Museum. During this time she is training in English and basic courses in population-environment and will take PhD entrance exams in September 2012.

#### **Activities (1.3) Production of ethnographic film showing the social and environmental costs of wildfires in regions dominated by cattle ranching and (2.3) Production of ethnographic film showing the social and environmental costs of wildfires for subsistence farmers and extractivists**

Filming was successfully completed and editing of four short films is within weeks of completion. This includes both Portuguese (narration and participants) and English (narration plus subtitles) versions of the film. We anticipate launching the films on youtube and our project website (which under construction) before July 2012.

#### **Other activities**

##### ***(3.4) Integration of a coherent fire policy into certification schemes for cattle ranching.***

We feel it would be unwise and irresponsible to commence dissemination of best practice or produce clear policy and certification recommendations before we have completed our analyses. Recognising the high dependence that many smallholder farms have on fire in the preparation of agricultural land our observation at this stage is that reducing wildlife requires careful fire management PLUS a transition to fire-free agriculture in the medium to long term. This transition is complex and depends on a range of factors including institutional support, land prices and the availability of private and publicly-owned farm machinery.

#### **4.2 Progress towards project outputs**

Our experiences of working with hundreds of farmers, producer organizations and a leading a large research network give us reason for optimism regarding changes in attitudes and agricultural practices used by cattle ranchers and subsistence farming. Rather than this project per se driving changes, we are very excited by the fact that we have observed "spontaneous" (exogenous of this project) shifts in attitudes and farming practices. We feel that the real important advance of our project is that we are understanding why this transition is occurring in some areas and not others. This provides us with an important insight into how policy levers can be designed to further expand this fire to non-fire transition across wider areas of Amazonia. We are extremely pleased and excited about the films we have produced and their potential as means of conveying the more technical and scientific issues we have

alluded to in this report. The films are accessible, interesting and rounded in their coverage of fire management and non-fire agriculture and we therefore believe that they will increase awareness (and potentially) behaviour amongst many thousands of Amazonians. In terms of achieving our objective of improved capacity to undertake policy relevant social research and develop awareness programs - we hope that our achievements in this regard are clear to see. We have far exceeded our original targets of the number of people trained in the field. Significantly, we have also contributed to a change in research direction in many very talented scientists (both established and studying) that would have traditionally shied away from social field research in the Amazon and instead either relied on coarse scale secondary data or the common research bias towards the south-east of Brazil. We strongly believe that we have contributed to a lasting improvement in regional research links in Brazil and beyond.

### 4.3 Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for reporting period	Total planned during the project
1A	Number of people to submit thesis for PhD qualification (in host country)	0	0	0		0		1
1B	Number of people to attain PhD qualification (in host country)	0	0	0		0		1
2	Number of people to attain Masters qualification <i>Amanda Estefania</i>	0	0	1		1		4
4C	Postgraduate students to receive training <i>3* PhD student (Brazilian - Erika Berenguer, Ricardo Solar, Samia Nunes)</i>	3	3	3		9		5
4D	Training weeks provided <i>Campinas workshop, June 2011</i>	2	7	1		10		3
6A	Number of people to receive other forms of education/training <i>Field assistants responsible for conducting farmer interviews</i>	10	16	6		32		10
6B	Number of training weeks to be provided <i>New data enterers (2) Heloisa filming techniques (1)</i>	4	6	3		13		6
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country	0	0	0		0		3
8	Number of weeks to be spent by UK project staff on project work in the host country <i>May-June 2011 (L Parry) 6 June 2011 (J Barlow) 2 Aug-Sept 2011 (L Parry) 2 Nov 2011 (L Parry) 4 Jan 2012 (J Barlow) 2 March 2012 (L Parry) 2</i>	12	46	18		76		72
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies	0	0	0		0		2

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for reporting period	Total planned during the project
	in the host country							
11A	Number of papers to be published in peer reviewed journals ( <i>see below</i> )	0	2	5		7		12
11B	Number of papers to be submitted to peer reviewed journals (all accepted)	0	2	5		7		12
12A	Number of computer based databases to be <b>established</b> and handed over to host country <i>In MS Access - partial data set (2011)</i> <i>MySql - full data set (2012)</i>	0	1	1		2		1
14A	Number of conferences/seminars/workshops to be <b>organised</b> to present/disseminate findings <i>Workshop with collaborators, Campinas, June 2012</i> <i>Accepted symposium at Association of Tropical Biology and Conservation in Bonito, Brazil, June 2012</i>	0	0	2		2		3
14B	Conferences/seminars/workshops attended <b>Invited seminar:</b> British Ecological Society annual symposium, 28 March 2011. Fires in tropical forests: Implications for REDD+. J Barlow and L Parry <b>Workshop,</b> <i>London School of Economics (LSE), June 2011. L Parry, J Barlow, T Gardner, J Ferreira, and collaborators.</i> <b>Workshop:</b> <i>Federal University of Acre, 06June2011: Developing learning networks to tackle environmental issues, a focus on fires in wouth west Amazonia. One day of talks and discussion with regional politicians and other actors held at UFAC. J Barlow and Luiz Aragao.</i> <b>Workshop:</b> <i>Fires in western Amazonia: The effects of climatic, social, demographic, land-use changes on fire incidence and fire hazard 19-22 Aug 2011. Pucallpa, Peru. J Barlow &amp; L Parry</i> <b>Invited seminar:</b> <i>How natural are Amazonian forests? Fire as a transformative process. Ecological society of America annual meeting, Austin, Texas. 08 August 2011. J Barlow</i> <b>Workshop:</b> <i>Identifying priorities</i>	0	1	3		4		10



Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for reporting period	Total planned during the project
	<p>for research on land-use change in Amazonia, 30 January - 2 February 2012. Clermont-Ferrand, France. T Gardner, S Marchand, J Feres</p> <p><b>Invited seminar:</b> Fire and the future of Amazonia. RGS Lecture series. J Barlow. 19 March 2012.</p> <p><b>Invited seminar:</b> Trade-offs between conservation and development in the Brazilian Amazon. Imperial College London, T Gardner. 18 February 2012</p>							
15A	Number of national press releases in host country(ies)	0	0	0		0		2
15B	Number of local press releases in host country(ies)	0	0	0		0		4
15C	Number of national press releases in UK	0	0	0		0		2
15D	Number of local press releases in UK	0	0	0		0		2
18A	Number of national TV programmes/features in host country(ies)	0	0	0		0		1
18C	Number of local TV programmes/features in host country(ies)	0	0	0		0		1
18D	Number of local TV programmes/features in UK	0	0	0		0		1
19A	Number of national radio interviews/features in host county(ies)	0	0	0		0		2
19B	Number of national radio interviews/features in UK	0	0	0		0		1
19C	Number of local radio interviews/features in host country(ies)	0	0	0		0		2
19D	Number of local radio interviews/features in UK	0	0	0		0		2
20	<p>Assets to be handed over to host country</p> <p>FLIP cameras * 10</p> <p>Laptop computers and hard-drives</p> <p>Dictaphone and microphone</p>	6000	0	0		6000		6000
23	Value of resources raised from other sources	101,040	64,806	5000		165,846		>£238,725

**Table 2**                      **Publications (in addition to publications from Year 2)**

Type	Detail	Publishers	Available from	Cost £
Journal article	Gardner T.A., Barlow J., Ferreira J, Parry L., Vieira I.C.G. (in press) A framework for integrating biodiversity concerns into national REDD+ programmes. <i>Biological Conservation</i> .	Elsevier	<a href="http://www.sciencedirect.com/science/journal/00063207">http://www.sciencedirect.com/science/journal/00063207</a>	
Journal article	Barlow J., Parry L., Gardner T.A., Ferreira J., Carmenta R., Vieira I.C.G., (In press) The critical importance of considering fire in REDD+ programs. <i>Biological Conservation</i> XX:xx.	Elsevier	Proofs available on request	
Journal article	Barlow J., Gardner T.A., Lees A.C., Parry L., Peres C.A. (in press). How pristine are tropical forests? An ecological perspective on the pre-Columbian human footprint in Amazonia and implications for contemporary conservation. <i>Biological Conservation</i> .	Elsevier	<a href="https://ueaeprints.uea.ac.uk/38573/">https://ueaeprints.uea.ac.uk/38573/</a>	
Journal letter	Developing an evidence base to assess the pristine nature of tropical forests	Elsevier	Proofs available on request	
Journal article	Carmenta, R, Vermeulen, S, Parry, L, Barlow, J. in review. Fire management and fire policy in the Brazilian Amazon: insights from two Caboclo communities. <i>Human Ecology</i>	Springer	(in review)	
Journal article	Ferreira, J et al. in press. Towards environmentally sustainable agriculture in Brazil: challenges and opportunities for applied ecological research. <i>Journal of Applied Ecology</i>	Blackwell	In press	
Journal article	Gibson, L., Lee, M.L., Koh, L.P., Brook, B.W., Gardner, T.A., Barlow, J., Peres, C.A., Bradshaw, C.J.A., Laurance, W.F., Lovejoy, T.E. and Sodhi, N.S. (2011). Primary forests are irreplaceable for sustaining tropical biodiversity. <i>Nature</i> , 478, 378-381	Macmillan	<a href="http://www.nature.com/nature/journal/v478/n7369/full/nature10425.html">http://www.nature.com/nature/journal/v478/n7369/full/nature10425.html</a>	
Book chapter	The Amazon in transition: the challenge of transforming the world's largest tropical forest biome into a sustainable social-ecological system. In <i>Addressing Tipping Points</i> , Eds. O'Riordan, T., Lenton, T., and Christie, I. Oxford University Press.		In press	

#### **4.4 Progress towards the project purpose and outcomes**

We believe that we have continued to successfully move towards achieving our project purpose of reducing Amazonian wildfires through research and training. We have demonstrated how we have combined training young Amazonian scientists, as well as supporting and encouraging scientists from elsewhere in Brazil to work more closely with Amazonian colleagues, and to take lead analytical and design roles. Our main educational outputs (films) are now almost ready to be launched to the public in Brazil and beyond. The evolution and growth in our collaborative networks provides support for our assumption that project partners can work effectively together. We are confident that the Goeldi Museum and Embrapa have the leadership, interest and capacity to implement and monitor the results of this project. They will be most effective in doing this if they can engage successfully with local governments and the private sector. First signs suggest that this is possible where and when both sides have sufficient potential gains from the interaction.

#### **4.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

We believe that this report demonstrates our significant progress in achieving (and moving towards achieving) our project outputs. We had already engaged with hundreds of rural producers, organizations and members of the scientific community in Amazonia and the rest of Brazil. If our imminent combined analyses of interview data and novel remote sensing products show evidence for link between a transition to non-fire agriculture and reduced wildfires, then we are contributing to a positive impact for biodiversity conservation in the Brazilian Amazon. The information and knowledge we have generated improves the potential for the sustainable use of resources (especially land and forests) in Brazil. Furthermore, with our in-depth look at the cost-benefits of smallholders switching from slash-and-burn to no fire use, we can have greater confidence in our ability to predict the relative social equity of any benefits accrued from reducing wildfires.

### **5. Monitoring, evaluation and lessons**

Monitoring has now changed slightly given that fieldwork ended in June 2011 and Dr Gardner and Dr Parry are now mainly UK-based instead of mainly Brazil-based. Dr Gardner communicates on a daily basis with the other key members (Parry, Barlow, Ferreira) and we meet weekly for meetings. This has been particularly necessary to ensure high data quality and error-checking of the main social survey dataset. We continue to hold multi-day meetings approximately every three months (in Lancaster) where we discuss progress and consider optimal approaches to reaching our objectives on-time. We maintain very close and frequent contact with our colleagues and team members in Brazil, both through our visits in person and email/skype. We are still confident of achieving our goals by the end of February 2013 (revised project end-date).

### **6. Actions taken in response to previous reviews (if applicable)**

We did not receive a review for our previous annual and half-annual report and are aware of no problems or concerns.

### **7. Other comments on progress not covered elsewhere**

None

## **8. Sustainability**

Following a successful meeting in June 2011 with the 30 main project collaborators, we also decided that clear division of responsibilities was required in order to maximise the potential benefits of the project and further enable the full participation and leadership of the many team members. This has helped to increase levels of autonomy within the different project components (e.g. remote sensing analysis, economic analysis) and encouraged longer-term involvement of Brazilian scientists. We also adopted an online project management platform (<https://projetoamazoniasustentavel.teamworkpm.net/>) to enable transparent sharing of ideas, data sources and plans to present, publish and discuss scientific outputs from the project. We believe that this has been a major step forward and will contribute to the research network's ability to grow well beyond the time-scale of the Darwin Initiative project. As demonstrated by the forthcoming review paper by Ferreira et al in *J Applied Ecology*, highlighting the relationship between agricultural expansion and biodiversity conservation in Brazil, our Brazilian collaborators are leading the country's environmental research agenda. This gives us great optimism that the progress made by this DI project will be maintained and multiplied over the years to come. As mentioned in our previous report and this one, the French research agency CIRAD has become more closely involved with the project. They are investing heavily in the Amazon region and we are hopeful that this, combined with our partnership with highly respected NGOs such as Imazon and IPAM, provides the potential to continue the non-governmental research agenda that we have begun, as a compliment to the Brazilian government-dependent organizations of the Goeldi Museum and Embrapa.

## **9. Dissemination**

(see precise details in table above)

### **1) Regional scientific community and international scientific community**

Dr Barlow and Dr Parry presented preliminary findings to a workshop in Peru, attended by the vast majority of fire experts working in Amazonia. Project students (undergraduate and postgraduate) have now presented their research to dozens of fellow students and academics in Belém and Paragominas. Thiago Morello presented initial findings and analytical ideas to a group of expert environmental economists in Panama.

### **2) Civil and learned society in the UK**

Dr Barlow presented initial findings of the project to an audience of c.700 members of the Royal Geographical Society.

Dr Gardner presented an overview of project work at invited seminars in the Universities of Cambridge (October 2011), Oxford (November 2011) and Imperial College London (February 2011). Dr Gardner also participated in a high level four-person panel debate on the future of the Amazon at Canning House, the leading institute for discussion and education on Latin American affairs, in April 2012, presenting some of the key findings of the project thus far

Interaction with the private sector and producer unions has been relatively modest during this reporting period but will increase significantly once provisional analyses are complete in July 2012. We are confident that the strong partnerships that we have already developed with the rural producer community (including both smallholder and large-scale mechanised farmers) provide a solid basis for effective stakeholder engagement and dissemination through 2012.

## 10. Project Expenditure

**Table 3 project expenditure during the reporting period (1 April 2011 – 31 March 2012)**

Item	Budget (please indicate which document you refer to if other than your project application or annual grant offer letter)	Expenditure	Variance/ Comments
Staff costs specified by individual - Parry			
Staff costs - Gardner			
Overhead costs			
Travel and subsistence			
Operating costs			
Capital items/equipment (specify)			
Others: Film-making and MSc stipend			
TOTAL			

The discrepancy between an overspend in travel and an underspend in "other" is due to the Lancaster team taking responsibility for field costs associated with film-production (hiring a local assistant, Heloisa Correa, driver, car hire, fuel etc) and leaving our subcontractor with financial responsibility solely for her personal travel and production/editing in New York. We are slightly overspent overall for this reporting period due to the unexpectedly high costs (due to time) of completing the data entry and verification process in Belém.

## 11. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for LTS and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

The overall goal of our project has been to link research and environmental education to help reduce Amazonian wildfires and the negative effects they have on rural livelihoods and conservation in the region. To tackle this problem we have developed a unique network of researchers, practitioners and land-owners across the state of Pará. Most importantly we have secured the participation of over 500 farmers and land-owners, including both smallholders, large-scale cattle ranchers and soy farmers, and large-scale timber plantation companies who have contributed invaluable data on the costs and benefits of fire use in rural Amazonia. In addition we have built very strong links to international, national and regional research institutions and universities, together with non-governmental organisations and the private sector. This diverse network has provided extraordinary opportunities to develop cutting edge scientific research and invest in the training and capacity building of tens of students and interns from the Amazon region and elsewhere in Brazil. A number of these interns are now engaged in higher level postgraduate training in São Paulo and the UK. Perhaps most importantly of all our network provides a unique opportunity to develop research approaches with local stakeholders, and deliver findings to the people that really matter - a community of rural producers who are together responsible for the management of over one million hectares of land in the state of Pará. A key part of our education strategy has been the development of four short Portuguese language films depicting the problems facing Amazon farmers who depend upon fire for small-scale agriculture, as well as the small and large-scale farmers, reserve managers and local officials who are often faced with the high financial and human costs of escaped wildfires. The combined scientific and educational work of this project has set a new standard for integrating researchers, practitioners and local people in efforts to better understand and reduce the impacts of fire on the environment and rural communities of eastern Amazonia.

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2011-2012

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
<p><b>Goal:</b> Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>		<p>We have engaged successfully with students, the research community, and 731 rural families, including subsistence farmers, large cattle ranchers, soy farmers etc. We believe that we are likely to produce a positive impact for biodiversity conservation in the Amazon. We have unprecedented understanding of the human dimensions of Amazonian wildfires and an truly world-class network of collaborating institutions and individuals</p>	
<p><b>Purpose</b> 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</p>	<p>Changes in attitudes to fire and in land use practices Training and capacity building Evaluation of impact of environmental education</p>	<p>Significant progress towards achieving reducing Amazonian wildfires through research and training. We have demonstrated measurable success in our training targets for young Brazilian scientists from the Amazon region. We have also demonstrated partnerships which are encouraging applied fire research in Amazon. We have successfully made our fire films.</p>	<ul style="list-style-type: none"> <li>• Assist PhD student with analysis and writing</li> <li>• Analyze data collected &amp; write scientific papers</li> <li>• Work on virtual landscapes platform</li> <li>• Cement plan for project exit strategy</li> </ul>
<p><b>Output 1.</b> 1. Change in the baseline attitudes and agricultural practices used by cattle ranchers</p>	<p>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</p>	<p>Our experiences of working with hundreds of farmers, producer organizations and a leading a large research network give us reason for optimism regarding changes in attitudes and agricultural practices used by cattle ranchers and subsistence farming. Rather than this project per se driving changes, we are very excited by the fact that we have observed "spontaneous" (exogenous of this project) shifts in attitudes and farming practices. We feel that the real important advance of our project is that we are understanding why this transition is occurring in some areas. This provides us with an important insight into how policy levers can be designed to further expand this fire to non-fire transition across wider areas of Amazonia. We are extremely pleased and excited about the films we have produced and their potential as means of conveying the more technical and scientific issues we have alluded to. We have far exceeded our original targets of the number of people trained in the field. We have far exceeded our original targets of the number of people trained in the field.</p>	
<p>Activity 1.1 Social and environmental costs of fires for cattle ranchers assessed</p>		<p>Data collection was completed in June 2012. We have comprehensive assessments of fire management practices, escaped fires, fire damage (to forest</p>	

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
		and farm infrastructure etc) and producer well-being measures from 496 properties (and 598 household surveys) from our main sampling regions (1 and 2), 39 interviews on fire (using comparable methods) from Region 3 (forestry matrix) and 178 interviews using comparable methods from extractive reserves on the Rio Arapiuns. Thus we have a total sample of 713 farms. All data has been checked for errors, and entered into a MySQL database using an internet interface. Data entered has also been checked and corrected. We will commence statistical analyses in May 2012. We have also carried out 18 semi-structured interviews with key stakeholders in Study Regions 1 and 2. We interviewed diverse members of local government (departments of agriculture, environment) and federal government agencies, as well as producer organizations. We were seeking to identify incentives and barriers to the adoption of fire-free agriculture in the Amazon region. All interviews have been transcribed.	
Activity 1.2, Virtual landscape fire scenario package developed for regions dominated by cattle ranching		We have not yet finalized plans for a virtual scenarios package. We believe that it may be more realistic and useful to focus on combining our results (from social, economic and remote sensing analysis) with easily accessible online GIS platforms such as Google Earth.	
Activity 1.3. Production of ethnographic film showing the social and environmental costs of wildfires in regions dominated by cattle ranching		Filming was successfully completed and editing of four short films is within weeks of completion. This includes both Portuguese (narration and participants) and English (narration plus subtitles) versions of the film. We anticipate launching the films on youtube before July 2012.	
Activity 1.4. Production of Radio documentary demonstrating the social and environmental costs of wildfires in regions dominated by cattle ranching		The documentaries have not yet been produced and we believe that with the very high levels of internet access now observed in Eastern Amazonia, we will focus our resources on effectively disseminating our film-based educational material.	
<b>Output 2.</b> Change in the baseline 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	See comments for Output 1.	
Activity 2.1. Social and environmental costs of fires for subsistence farmers assessed		See 1.1, above	

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
Activity 2.2. Virtual landscape fire scenario package developed for regions dominated by subsistence farmers and extractivists		See 1.2, above.	
Activity 2.3. Production of ethnographic film showing the social and environmental costs of wildfires for subsistence farmers and extractivists		See 1.3, above.	
Activity 2.4. Production of Radio documentary demonstrating the social and environmental costs of wildfires for subsistence farmers and extractivists		See 1.4, above.	
<b>Output 3.</b> Improved capacity to undertake policy relevant social research, develop environmental education and awareness programs, and monitor and evaluate their effectiveness.	<p>Improved capacity in local government in the state of Pará (able to plan, undertake and monitor impact of environmental education).</p> <p>The establishment of learning portfolios/networks in communities in fire-prone areas.</p> <p>Improved expertise in undertaking social research, and coordinating and undertaking large-scale environmental education programs.</p>	We hope that our achievements in this regard are clear to see. We have far exceeded our original targets of the number of people trained in the field. Significantly, we have also contributed to a change in research direction in many very talented scientists (both established and studying) that would have traditionally shied away from social field research in the Amazon and instead either relied on coarse scale secondary data or the common research bias towards the south-east of Brazil. We strongly believe that we have contributed to a lasting improvement in regional research links in Brazil and beyond.	
Activity 3.1. Field course in Altamira for IDEFLOR staff and students to improve capacity to engage with cattle ranchers.		We relocated the course to Santarém held with UFPA students and University of Sao Paulo students, our interviewers and Embrapa staff. We successfully completed this course in July 2010. The convenors were Dr Parry, Dr Barlow, Dr Gardner (Cambridge), Dr Ferreira (Embrapa). The course lasted 5 days and included: communicating with rural producers, mapping sample watersheds, participatory mapping of farms, converting agricultural units (of land and production), rigour in interviews, use of GPS, use of excel. The course was held in UFoPA and in the field. See previous report.	
Activity 3.2. Community-based workshops conducted in Extractive Reserves and establishment of learning portfolio.		Rachel Carmenta successfully conducted four community-based workshops in the Tapajós-Arapiuns Extractive Reserve in November 2010. These were held in two communities, Sao Jose II and Pascoal. Different participatory techniques were used in these workshops, including seasonal calendars, brainstorming, open-ended guiding questions, oral testimonies, matrixes, participatory mapping, and group and plenary discussions. The learning portfolio has not yet been established though Ms Carmenta intends to share her outputs with the ResEx and community leadership. See previous report.	
Activity 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		We have been working closely with Grupo Orsa staff on improving their fire monitoring techniques as a means of reducing wildfires in their 1.7 million hectare landholding. We will work more closely with public bodies in Pará state in this regard once we have the scientific outputs of our project to serve as a basis for discussion.	



Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
Activity 3.4. Integration of a coherent fire policy into certification schemes for cattle ranching.		We will dedicate our efforts to this activity once we have the scientific outputs of our research ready.	
			<p><i>Activity 4.1 Research undertaken and students achieve qualifications.</i></p> <p>We dedicated considerable time to supporting the projects' Brazilian MSc students (Amanda Estefania) to develop their theses. One student handed in on-time and received an exceptionally high mark (9/10) for her project on smallholder forestry and fire hazard. The quality of her research was judged as exceptional by the very well-respected panel (consisting of a climate scientist, an environmental economist and a rural sociologist). Unfortunately our second MSc student experienced significant personal problems in December 2011 and has been granted until July 2012 to hand in her thesis. Our two undergraduate research students (Amanda Cardoso and Fatima Santos Lopes) have both successfully defended their dissertations (both on the flammability of degraded forests) and received their degrees from the State University of Pará. We continued to invest (time and supervision) in the educational futures of two project assistants, Karoline Goncalves and Alessandra Gomes. We provided two days a week to prepare for MSc entrance exams though unfortunately neither was successful this time. We have invested in another project assistant, Heloisa Correia, with the aim of maximizing her chances of entering one of Brazil's top Universities, UniCamp. We have secured her a stipend until October 2012, via support from the Goeldi Museum. During this time she is training in English and basic courses in population-environment and will take PhD entrance exams in September 2012.</p>

## Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>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.</p>			
<p>Sub-Goal:</p> <p>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.</p>	<p>A reduction of wildfires, changes in agricultural practice, and an increase in environmental education schemes.</p>	<p>Earth observation data (satellite monitoring of the timing, frequency and location of fires).</p> <p>Monitoring of agricultural practices by Brazilian counterparts (both within governmental institutions, and within local communities).</p> <p>Development of environmental education schemes</p>	
<p>Purpose:</p> <p>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.</p>	<p>Changes in attitudes to fire and in land use practices</p> <p>Training and capacity building</p> <p>Evaluation of impact of environmental education</p>	<p>Baseline and end of project attitude surveys compared and analysed</p> <p>Baseline and regular monitoring of land use practices and fire by IDELFOR and communities</p> <p>Baseline and regular assessment of effectiveness of education programme events through formal and informal techniques</p>	<ul style="list-style-type: none"> <li>Project partners are able to work together and communicate effectively</li> </ul> <p>IDEFLOR has the institutional capacity to implement the dissemination, education, and the monitoring of the results.</p>
<p>Outputs</p> <p>1. Change in the baseline attitudes and agricultural practices used by cattle ranchers</p>	<p>Social and environmental costs of fires are quantified for cattle ranchers</p> <p>Development of virtual landscape fire scenario package as policy tool.</p>	<p>Data collected, validated, and available to partners</p> <p>Data validated and compiled into GIS database</p>	<p>Farmers collaborate with social researchers through agreed links (AVISAR)</p> <p>Date collected is useful for building virtual landscapes – Virtual Landscape scenarios are interpretable by stakeholders.</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	<p>Development of ethnographic film showing the social and environmental costs of wildfires</p> <p>Development of Radio documentary demonstrating the social and environmental costs of wildfires</p>	<p>Publications submitted</p> <p>3D model developed</p> <p>Film available for dissemination</p> <p>Radio documentary available for dissemination</p>	<p>Farmers and smallholders collaborate with film project</p> <p>Smallholder communities collaborate with radio project</p>
<p>2. Change in the baseline attitudes and agricultural practices used by subsistence farmers</p>	<p>Social and environmental costs of fires are quantified for subsistence farmers</p> <p>Development of virtual landscape fire scenario package</p> <p>Development of film showing the social and environmental costs of wildfires</p> <p>Development of Radio documentary demonstrating the social and environmental costs of wildfires</p>	<p>Data collected, validated, and available to partners</p> <p>Data validated &amp; compiled into GIS database</p> <p>Publications submitted</p> <p>3D model developed</p> <p>Film available for dissemination</p> <p>Radio documentary available for dissemination</p>	<p>Farmers collaborate with social researchers through agreed links (AVISAR)</p> <p>Date collected is useful for building virtual landscapes</p> <p>Smallholder communities collaborate with film project</p> <p>Smallholder communities collaborate with radio project</p>
<p>3. Improved capacity to undertake policy relevant social research, develop environmental education and awareness programs, and monitor and evaluate their effectiveness.</p>	<p>Improved capacity in local government in the state of Pará (able to plan, undertake and monitor impact of environmental education).</p> <p>The establishment of learning portfolios/networks in communities in fire-prone areas.</p> <p>Improved expertise in undertaking social research, and coordinating</p>	<p>State government undertakes education and monitoring program and makes results available.</p> <p>Local communities participate in the project, monitor their activities, and share results.</p> <p>MSc and PhD students complete</p>	<p>State government maintains interest in project</p> <p>Communities are interested, and are willing to undertake monitoring.</p> <p>Students are integrated into project structure</p>

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	and undertaking large-scale environmental education programs.	studies by EoP  Government and research institutions in Pará continuing engagement with INPE and University of Campinas	and complete their course  Institutions in Pará and those in the south-east of Brazil are willing to work together.
<p><b>Activities</b> (details in workplan)</p> <p>1.1 Social and environmental costs of fires for cattle ranchers assessed</p> <p>1.2 Virtual landscape fire scenario package developed for regions dominated by cattle ranching</p> <p>1.3 Production of ethnographic film showing the social and environmental costs of wildfires in regions dominated by cattle ranching</p> <p>1.4 Production of Radio documentary demonstrating the social and environmental costs of wildfires in regions dominated by cattle ranching</p> <p>2.1 Social and environmental costs of fires for subsistence farmers assessed</p> <p>2.2 Virtual landscape fire scenario package developed for regions dominated by subsistence farmers and extractivists</p> <p>2.3 Production of ethnographic film showing the social and environmental costs of wildfires for subsistence farmers and extractivists</p> <p>2.4 Production of Radio documentary demonstrating the social and environmental costs of wildfires for subsistence farmers and extractivists</p> <p>3.1 Field course in Altamira for IDEFLOR staff and students to improve capacity to engage with cattle ranchers.</p> <p>3.2 Community-based workshops conducted in Extractive Reserves and establishment of learning portfolio.</p> <p>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</p> <p>3.4 Integration of a coherent fire policy into certification schemes for cattle ranching.</p> <p>4.1 Research undertaken and students achieve qualifications.</p>			
<p>Monitoring activities:</p> <p>Indicators for 1 &amp; 2. Social and environmental research is undertaken, virtual landscape fire scenarios tool is produced, and film and radio outputs are completed.</p> <p>Indicators for 3. Training courses take place and enhance capacity in IDEFLOR. Community-based workshops take place.</p> <p>Indicators for 4. Publications and qualifications available.</p>			

## Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

### Checklist for submission

	Check
<b>Is the report less than 5MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	
<b>Is your report more than 5MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
<b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	