



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 2011

1. Darwin Project Information

Project Reference	17-027
Project Title	Market Based Scheme for Conservation in La Primavera Forest Mexico
Host Country/ies	Mexico
UK contract holder institution	DICE- University of Kent
Host country partner institutions	ITESO
Other partner institutions	University of Twente, La Primavera Natural Protected Area, UNAM, ALICEA AC, Corazon de la Tierra, Fomento y Protección Bosque La Primavera
Darwin Grant Value	100,481
Start/end dates of project	2009-04-01 to 2012-03-31
Reporting period (eg Apr 2010 – Mar 2011) and number (eg Annual Report 1, 2, 3)	1 April 2010 to 31 Mar 2011, Annual Report Number 2
Project Leader name	Dr. Jon C. Lovett
Project website	Under construction
Report authors, main contributors and date	Arturo Balderas Torres, Jon Lovett 29 th April 2011

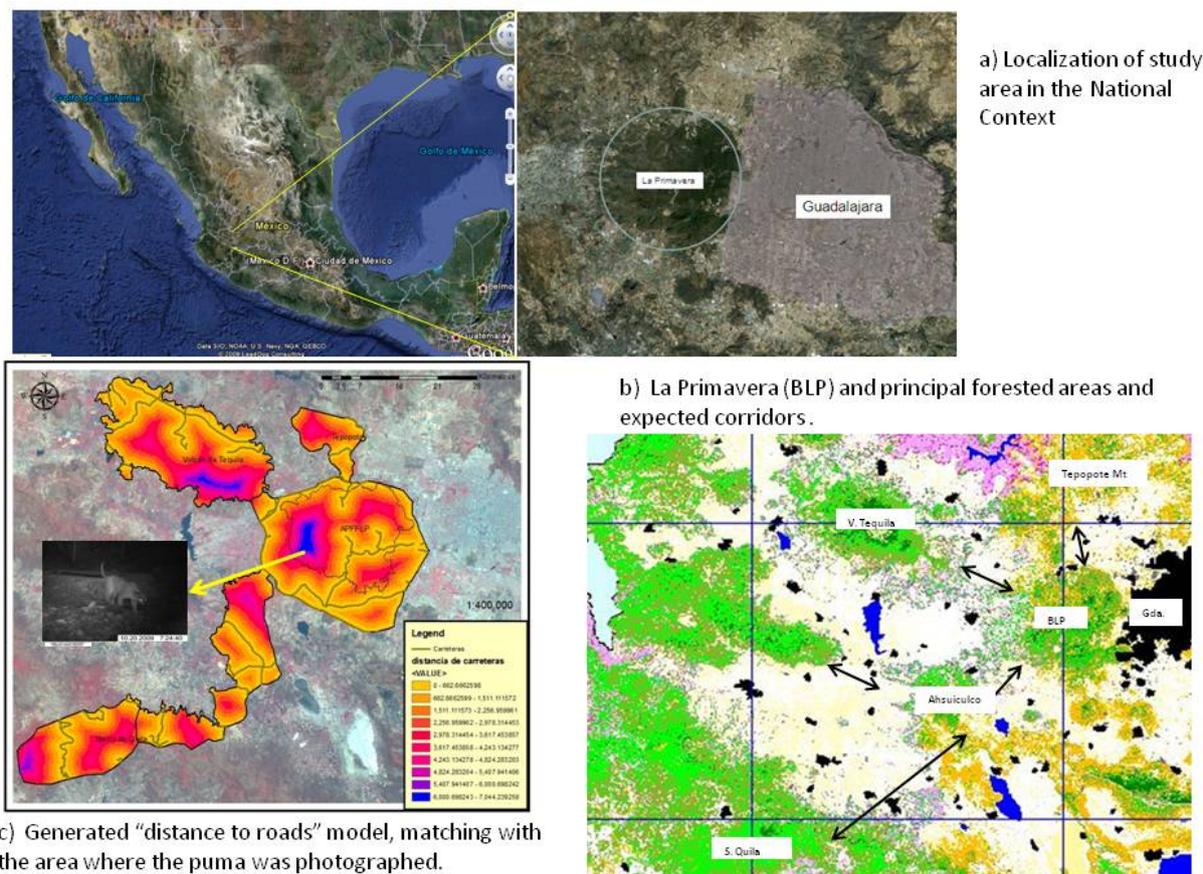
2. Project Background

There were no changes in the management structure of the project over the reporting period. The project is led in the UK by Prof. Douglas MacMillan and Dr. Jon Lovett at the University of Kent. M.Sc. Arturo Balderas Torres is the field coordinator of the project in Mexico; he is based at ITESO and is currently on a temporary leave to pursue his Ph.D. studies at the University of Twente in The Netherlands with support from a CONACYT scholarship programme under the supervision of Drs Skutsch and Lovett. Dr Skutsch is presently seconded to UNAM in Mexico. Work undertaken by Arturo Balderas under the Darwin project will be used in part for the publications which will form his PhD. The research agenda was originally positioned in the La Primavera management office by Arturo Balderas at the start of the project and the relationship between the project and the management office continues to be strong and positive.

This research explores the potential for capturing environmental values in a market-based scheme based on above-ground carbon accounting in order to develop habitat conservation and restoration activities in and around the La Primavera forest, Mexico. La Primavera's Natural Protected Area was created in 1981, and was categorized as a Biosphere Reserve in 2006. It consists of 30500 ha of pine-oak forest located in western Mexico next to the second biggest city in the country, Guadalajara Metropolitan Area (CONANP, 2000). Cougars (*Puma concolor*) are the top predator in the forest and biological corridors are needed to maintain a long term viable population. Urban pressure and land use change are isolating La Primavera and closing natural biological corridors for wildlife.

The project is investigating the potential for implementing a local voluntary payment based on carbon-sequestration values of the La Primavera and surrounding forests in order to enhance conservation and restoration activities to halt habitat loss of the oak-pine forests. Firstly the potential for carbon production in aboveground living tree biomass has been estimated for 30500 ha of La Primavera and 30000 ha of adjacent land. This was achieved through ground surveys and analysis of satellite images. Secondly, the potential for payments for ecosystem services from citizens and organizations in Guadalajara was estimated through surveys. Thirdly, the implementation, transaction and opportunity costs and the landowner's willingness to supply ecosystem services has been estimated through questionnaire surveys and interviews. Finally an assessment of the viability of a voluntary scheme will be assessed and a proposal for implementation put forward.

Figure 1. Identification of the project area.



3. Project Partnerships

Given the nature of the project a local network was needed to enable the access to the research area and contact the relevant stakeholders (e.g. citizens and landowners) in a prompt and secure way. La Primavera Office, ITESO and three local NGOs working in the area were contacted to participate in the project.

The general research agenda and the logical framework of the Darwin Project were prepared at the end of 2007 and beginning of 2008 by Mr. Balderas and Dr. Lovett. The research agenda and methodologies were agreed jointly with local stakeholders. The timetable of activities was prepared in coordination with the UK team. Activities are revised constantly through email and online conferences using skype with contact between Dr Lovett and Mr Balderas at least 2-3 a week. Mr. Balderas also travels to The Netherlands once a year to meet with Dr. Lovett and present academic reports of his work. The timetable is discussed, specific methodologies and questionnaires are reviewed and then tested in pilots. These are discussed with Prof. MacMillan, Drs. Lovett and Skustch, and the other project stakeholders (ITESO, La Primavera

Office, NGOs). Then the work plan is presented to the partners and feedback is received and specific arrangements are set; for instance to contact the landowners of one ejido, representatives of La Primavera or an NGO provide the contact information or visits with the fieldworkers.

Bachelor students studying at ITESO have been invited to participate as volunteers in specific activities of the project. ITESO requires its students to develop a Professional Practices Project (PPP) in order to be eligible for graduation, in this PPP the student applies part of the knowledge and skills learned to generate a technical report. Medical insurance is provided by ITESO. Students have participated as volunteers in the teams for tree measurement, GIS analysis, and the application of surveys to assess the willingness to pay for forest carbon services.

The management and activities developed in the project are classified as academic management, project management and administration, and general support. Development of fieldwork is responsibility of Arturo Balderas Torres in collaboration with a local network of organizations and stakeholders. Analysis of information gathered during the fieldwork is conducted by Arturo Balderas, who is responsible for assembling the final report and information for dissemination (e.g. scientific journals), Prof. MacMillan and Dr. Lovett, Dr. Skutsch (CIGA-UNAM) and other co-authors also provide inputs for these documents. ITESO provides access to GIS lab and creates PPP for the participation of students. ALICEA A.C. provides the administrative basis to contract personal for the development of fieldwork and survey enumeration. The La Primavera managerial office provides personal, infrastructure and logistic support to access the reserve and contact landowners and other relevant stakeholders (e.g. Jalisco's Congress Representatives chairing environmental affairs).

ALICEA A.C. was chosen to help in the fieldwork activities because Dr. Ofelia Perez is a well-known local researcher (e.g. she was involved in the creation of the Biosphere Reserve of Manantlan). Her experience is useful in lobbying and dissemination of the project results. Arturo Balderas regularly makes presentations to La Primavera, ITESO and the NGOs on research findings and the work plans for further activities. During the second year new partnerships were created which will contribute to the development of the project. These partnerships include Dr. Margret Skutsch participating with CONAFOR in the development of the REDD+ pilot project in Jalisco. The project will start in the coastal area of Jalisco (Ayuquila River Basin). Arturo Balderas has also attended to the initial meetings. The results of the Darwin Project will be presented to the members of the Jalisco REDD project and CONAFOR with the aim of including them in the local programs and possibly extending the area of the REDD project to La Primavera.

In 2010 Arturo Balderas, as part of ITESO, was invited to collaborate with a group of local researches in activities coordinated by the Jalisco Ministry of Environment and the National Ecology Institute to prepare the Jalisco State Plan on Climate Change Action (PEACC in Spanish). As part of the PEACC, GHG inventories will be elaborated and mitigation strategies designed and proposed. Arturo Balderas will use this opportunity to position the results of the Darwin project research into the local policymaking agenda.

Dr. Lovett arranged with Dr. Sam Wasser that M. Sc. Jennifer White from the Conservation Canines group of the Centre for Conservation Biology of the University of Washington to visit La Primavera in summer 2010. Conservation Canines is pioneering the use of non-invasive techniques to study wildlife populations. Since the focus of the Darwin Project is more oriented towards economic analysis of conservation and forest restoration with emphasis on climate change implications, there were no specific activities and resources for the empirical study of the corridors. Jen White is studying jaguar populations in southeastern Mexico and included one week in Guadalajara to conduct exploratory transects in La Primavera with Scooby (the tracking dog) in the area where the puma was photographed. Samples were taken from scats found and the La Primavera managerial office has provided extra resources to conduct laboratory analysis of the samples Results are not available yet as Jen White is in the field at the present time.

Development of pilot projects was not included in the project for cost reasons, thus no specific resources and activities were devoted for this purpose in the project design and budget. Nevertheless thanks to the close collaboration with the Managerial Office of La Primavera it was possible to identify one local company and NGO who is willing to develop a local conservation project to offset their carbon emissions. The local music band Mana is planning a world tour and wanted to estimate the carbon emissions and explore possible mitigation activities. It is a band with deep environmental interests (<http://www.youtube.com/watch?v=u9STP6Xlmbk>). They created the NGO Selva Negra which has worked in coastal areas in turtle camps and projects in other regions of Mexico (<http://www.selvanegra.org.mx>). Arturo started collaborating with Selva Negra in late 2009 to generate the estimates of carbon emissions and shape the potential strategies to reduce the environmental impacts of the tour. Negotiations are advancing with the ejido of Ahuiscolco located in one of the biological corridors connecting La Primavera to Sierra de Quila to create a conservation and reforestation project. The project is being designed for 10 years and will provide the resources to conserve over 1000 ha of forest and reforest 80 ha. Selva Negra is interested in creating an integral strategy to promote local development and not focus only on the commodification of carbon offsets. The project plan is currently to invest an estimated 500,000 GBP in the pilot project. Arturo Balderas is collaborating in the design of this project. This will ensure uptake of the Darwin activities into practical implementation.

The project partners have been successful (on the second application) in obtaining a research grant of Euro 522,118 from the Dutch Scientific Research council which will expand and follow up the Darwin project work. The project title is 'Linking local action to international climate agreements in the tropical dry forests of Mexico'. The project will be led by Margaret Skutsch together with Jon Lovett and other partners. It will fund three Mexican PhD students and contains a two year post-doc position for Arturo Balderas which will be available from the date of completion of the Darwin project in 2012. A kick-off meeting was held in Mexico during February 2011 for formulation of the PhD student projects.

The partnerships developed by the project participants in Mexico are opening the doors for integration of the findings of the project into local agendas and policymaking processes, both in La Primavera and the wider region. The project has also attracted significant interest in application of payments for ecosystem services to conserve big cat habitat (for both puma in the uplands and jaguar in the lowlands). This offers the potential for a follow up project.

4. Project Progress

4.1 Progress in carrying out project activities

During this year the activities proceeded according to the timetable. Many activities have been completed and the remaining activities are on time according to the plan set for the third and final year of this DI project.

Concerning activities related to Output 1, initial results of the potential for carbon storage and sequestration in oak-pine forests were presented in national academic meetings. Information on potential growth curves and carbon content in above ground biomass (AGB) was presented during the 2nd International Symposium of Carbon in Mexico. Two papers targeting peer reviewed journals (e.g. *Biotropica*, *Forest Ecology and Management*) are under preparation. Results based on the forest inventories and potential carbon sequestration by tree AGB are completed. Analysis of canopy cover in satellite images has been done. The final version of the map for Output 1 will be completed as part of the writing and dissemination activities of this component and the overall report. We expect to have more information from CONAFOR regarding the national REDD+ baseline and more details emerging from the UNFCCC COP 17 about specific methodological issues. Specifications for reforestation and conservation practices for the pilot project have been developed. These are based on CONAFOR best management practices and from the KTGAL and general forest inventory practices for community forest monitoring. Uncertainty analysis according to GPLULUCF will be included.

There was no delay in performing the surveys to assess the willingness to pay for forest carbon services and those studying the willingness to participate in conservation and restoration activities among landowners (Output 2).

The costs of the Voluntary Market Schemes have been estimated, requirements and resources required for the implementation of conservation and reforestation activities have been identified as part of the Pilot project currently under development in the biological corridor. The costs of REDD+ are not yet defined. REDD+ will be driven at the country level so transaction costs associated with project development, registration and monitoring are still not clear. It is likely that these costs will be borne by the federal government. A REDD+ pilot project is under development in the Coastal Area of Jalisco, and one of the project participants Margaret Skutsch (CIGA) is working closely with CONAFOR in this project. Arturo Balderas is also working on these activities and in the forthcoming year findings of the Darwin Project will be presented with the objective of assessing inclusion of local valuation mechanisms as part of REDD+ activities. The transaction cost values used by default for the development of projects oriented to compliance markets will be those associated with CDM reforestation/afforestation projects. The opportunity costs obtained are based on regional agricultural production statistics and surveys of landowners. In order to assess the willingness to participate in conservation and reforestation activities a choice experiment survey was designed and tested. The survey focused on evaluation of factors that may enable landowners to join conservation and restoration projects. The effect of a PES like payment per hectare per year, the number of years in which this is received and the potential access to co-benefits (e.g. support of alternative productive projects and employment) has been assessed. After exploratory interviews were undertaken it was decided to change the approach of the survey from solely a reforestation project for carbon sequestration, to a conservation and restoration approach. This was decided after considering the high opportunity costs of agricultural land and the ethical implications of reducing food output. If we had included payments that matched high opportunity costs, the survey designed would have presented unrealistic payments (e.g. the productivity of sugar cane plantations in the region is around \$US 6000/ha-yr). Contacts were established with the association of landowners and the ejidos of La Primavera and the Federation of Small Landowners of the State of Jalisco, for the coordination and application of surveys. Three people were trained for the application of surveys/interviews. The 90 surveys originally planned have been applied. As well as the ejidos, surveys have also been applied to non-ejido landowners with properties inside and outside the protected area. The application of more surveys in the area of the biological corridor of Ahuiscolco where the pilot project is under development is being considered. Initial statistical analyses have been developed and coding of the data is under way.

In relation to Output 3 a choice experiment was designed to assess the effect of project location of the valuation of forest carbon services. Specific characteristics of the potential schemes and financial options were also included. Surveys were applied both on-line and in market stall sessions within the metropolitan area of Guadalajara. Due to the current situation in Mexico, special attention was paid to security issues. Contact was established to representatives of neighbourhood associations to safely schedule the sessions for the application of surveys. Five people were trained in how to conduct market stall sessions and apply choice modelling surveys. A total of 342 surveys were applied in person and a further 1100 were applied on-line to test the differences between different sampling procedures. These surveys targeted citizens, including entrepreneurs from different productive sectors. The figures of the potential participation will be complemented with the results arising from the PEACC and the pilot project. Estimates of the valuation of forest carbon services by citizens have been obtained. Results were presented at the 11th Biennial conferences of the International Society of Ecological Economics, the 2nd International Symposium of Carbon, and UNFCCC COP 16 in Cancun. Two papers for peer reviewed journals are under preparation presenting the valuation of carbon services and forests by citizens (e.g. Ecological Economics, Regional Environmental Change). The use of national income-expenditure statistics for quick carbon footprint estimations for households was presented as part of the 2nd International Symposium of Carbon.

Basic aspects related to the motivation for participation, payment vehicle, periodicity, and management were included in the WTP surveys; this information will be complemented with the findings of the PEACC, the WT supply questionnaires being applied and interviews to key stakeholders. Ten semi structured interviews have been conducted and a further ten are planned. Relevant actors have been consulted also as part of the design of the Pilot Project the activities related to Output 4 are on-going and on time.

4.2 Progress towards project outputs

The progress of the project so far has generated the key information that will allow the evaluation of the potential for local market based mechanisms for the development of forest conservation and reforestation activities. The core information is being prepared for publication in peer reviewed journals. Currently there are two papers under preparation related to Output 1, these articles will present in more detail the preliminary findings presented showing the relationships between DBH, tree density and estimated AGB which will allow development of accessible tools to estimate carbon content in forests; it is expected that the use of this type of interpolation will help to find correlates in the analysis of forest inventories and satellite images. There is one paper under preparation related to Output 2 in which the causes of deforestation and degradation are analysed based on the findings of a workshop where the ZOPP methodology was applied. There are two papers related to Output 3, the first one showing the effect of geographical location on the valuation of forest carbon services and a second one comparing the methodologies in the application of choice experiments; finally there is one paper under preparation related to the Output 4 where the potential for the provision of forest carbon services at a municipality level is discussed. This paper builds on the paper previously presented during the world forest congress in Argentina in 2009.

At the beginning of the study three assumptions were identified that which help in the successful implementation of the project. These assumptions are related to economic conditions, forests fires and security.

Security is an important issue due to the escalation in drug related violence in the region. In 2010 there was a shooting between the army and crime members close to one of the tree measurement plots in La Primavera. In another incident during summer 2010 one week after applying willingness to pay surveys in one area of Zapopan, the army closed several streets in that area for one day and there was a shooting. Precautions are always paramount when planning fieldwork activities.

In addition to security issues, other assumptions of the study have also gained importance. Firstly Mexico has suffered a deep economic crisis in the last two years which may reduce the potential for local financing. Secondly, climatological processes of the last two years associated with El Nino, have recreated the conditions that prevailed in 2005 when the last major forest fires affected La Primavera. The forest will be particularly vulnerable to fires at the end of year's dry season in June. The effect of these assumptions and variables will be included in the final report; information of historical fires it will help to set the baseline for GHG emissions and for the preparation of budgets and preventive action plans.

4.3 Standard Measures

Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Number planned for this reporting period	Total planned from application
4A	Number of undergraduate students to receive training	13	2		15	NA	NA
4B	Number of training weeks to be provided						
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above)		*342 In person Survey, 1,100 Online survey. 90		1532		

			Landowners.				
6B	Number of training weeks to be provided						
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country						
8	Number of weeks to be spent by UK project staff on project work in the host country	1	3		4		
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			1			
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording			1			
11A	Number of papers to be published in peer reviewed journals	1			1	NA	NA
11B	Number of papers to be submitted to peer reviewed journals			4		NA	4
12A	Number of computer based databases to be established and handed over to host country			1			1
12B	Number of computer based databases to be enhanced and handed over to host country			1			1
14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings			1			
14B	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/ disseminated.		3		3		
15B	Number of local press releases in host country(ies)	3	5		8		
15D	Number of local press releases in UK						
19C	Number of local radio interviews/features in host country(ies)		1 TV interview.		1		
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	103			103		
23	Value of resources raised from other sources (ie in addition to Darwin funding) for project work		WOTRO grant 522,118 Euro	Pilot Project 500,000 GBP - pending	0.52m Euro		
New - Project specific measures							

*Before the surveys for willingness to pay for forest carbon services the respondents received a brief explanation of carbon sequestration, the role of forests in climate change mitigation and the development of conservation and reforestation projects; respondents often indicated they had learned a lot about this topic thanks to the study.

Publications

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Conference Paper	Balderas Torres, Arturo, Margaret Skutsch, Douglas C. MacMillan, Jon C. Lovett. Valuation and potential demand for forest carbon sequestration services among Mexican households: the case of Guadalajara City and La Primavera Biosphere's Reserve. 2010	11 th Biennial Conference, International Society for Ecological Economics, "Advancing Sustainability in a Time of Crisis" Oldenburg and Bremen, Germany		-
Conference Poster	Balderas Torres, A., MacMillan, D.C., Skutsch, M., Lovett, J.C. Valuation of Carbon Sequestration Services and the Potential for PES mechanisms and REDD+ in Mexico. 2010.	Forest Day. 4. Conference of the Parties on the United Nations Convention on Climate Change COP-16 Cancún, México.		-
Symposium Poster	Balderas Torres A., Skutsch, M., Lovett, J.C.. Perfil General de Emisiones de Gases de Efecto Invernadero (GEI) de los hogares en México en el 2006. (2010)	II Simposio Internacional del Carbono en México. Programa Mexicano del Carbono, Instituto Tecnológico de Sonora, Instituto Nacional de Ecología 6 al 8 de Octubre 2010, San Carlos Nuevo Guaymas Sonora, México.		
Symposium Poster	Balderas Torres A., Ontiveros Enríquez, R., Skutsch, M., Lovett, J.C.. Uso de las relaciones entre DAP, diámetro de copa (K) y densidad (N) para evaluar la variabilidad de la biomasa aérea arbórea (BAA) en el bosque de pino-encino de La Primavera, Jalisco México. (2010)	II Simposio Internacional del Carbono en México. Programa Mexicano del Carbono, Instituto Tecnológico de Sonora, Instituto Nacional de Ecología 6 al 8 de Octubre 2010, San Carlos Nuevo Guaymas Sonora, México.		
Symposium Poster	Balderas Torres A., MacMillan, D.C., Skutsch, M., Lovett, J.C. Determinantes de la valoración ciudadana de los servicios de captura de carbono en bosques: el caso del bosque La Primavera y Guadalajara, Jalisco México. (2010)	II Simposio Internacional del Carbono en México. Programa Mexicano del Carbono, Instituto Tecnológico de Sonora, Instituto Nacional de Ecología 6 al 8 de Octubre 2010, San Carlos Nuevo Guaymas Sonora, México.		
La Selva Negra Website blog on UNFCCC CoP 16	Balderas Torres A	http://www.selvanegra.org.mx/cop16.asp		

4.4 Progress towards the project purpose and outcomes

Project progress made against the project purpose and outcomes continues to be satisfactory. The first and second stages have been completed and third stage is ongoing. The carbon production and the WTP estimates have identified the potential of a local payment scheme for environmental values independent from public budget in La Primavera to provide resources for rural development, enhancing ecosystem services, protecting biological corridors and halting land-use change in the oak-pine forest. The results of the work are in the process of being prepared for publication and preliminary results have been presented at a series of conferences including the UNFCCC CoP 16 meeting in Cancun. The project is engaging with local policymakers to generate the necessary incentives to implement conservation policies, but the economic crisis and internal security issues mean that policy engagement remains a critical assumption.

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

Arturo Balderas is collaborating with local universities (ITESO, Universidad Autónoma de Guadalajara, Universidad de Guadalajara) and the Ministry of Environment of Jalisco in the preparation of a proposal for the Jalisco's Climate Change Action Plan. He was also invited by the La Primavera Reserve Director along with representatives of the civil society, landowners and ejidos, to make a presentation to local congressmen to stress the importance of La Primavera for Guadalajara and to show initial research results and discuss international climate mitigation efforts so that appropriate resources for the Reserve's management could be budgeted. A few weeks later the forestry and environment congress commissions

proposed a historically large budget of 20 million pesos for the La Primavera office (compared to 7 million the previous year). Although the project was influential in helping an increased budget to be proposed the governor vetoed the yearly budget because in other parts of it he did not get money for specific programs he wanted. As an agreement was not reached, by default the budget approved was equal to that of the previous year. In the budget officially La Primavera had no money and the 7 million were allocated later by a local secretary. This illustrates the critical assumptions mentioned in section 4.4.

Other progress includes ongoing discussions with the Selva Negra NGO of the music group Mana and local ejidos have resulted in an agreement for a pilot payment for ecosystem services project in which the community will benefit directly (see minutes of the ejido meeting in Annex 3). Expansion of project research activities to other areas in Mexico will be made possible through a grant to the project team from the Dutch research council. Mexican NGOs working on big cats have expressed interest in using the Darwin results to enhance both Puma and Jaguar conservation.

5. Monitoring, evaluation and lessons

Project activities and achievements are monitored against the log frame and time chart of activities (Annex 1 & 2). Evidence of project activities is given in Annex 3. In particular the posters give details of the data gathered and results.

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

The comments received as part of the evaluation of the first year report have been included in the body of the document. The comments addressed include the description of the management structure and functions, the implementation of activities and progress towards standard measures. Other comments have been considered in the creation of new partnerships (e.g. REDD+ pilot in Jalisco) and pilot project in la Primavera region.

We do not understand the reviewers comments concerning monitoring. The reviewer states 'Monitoring would be better carried out by a yearly review of achievements against the project logframe'. 'there is a lack of clarity to the reporting that makes it difficult to fully assess the extent of the project's progress and ascertain whether the project remains on target'. All activities and outputs were reviewed in last year's report in Annex 1 and we have done this again this year. To clarify where the information is located this has been specifically referred to in Section 5. Space limitations in the main body of the report prevent us from extensively repeating information from the Annexes.

7. Other comments on progress not covered elsewhere

None.

8. Sustainability

The objective of the project is not to create an operative local market based mechanism for the valuation of the ecosystem services provided by La Primavera. The primary objective is to identify the potential for it, and determine whether or not, or under which circumstances it will be feasible. Based on the results obtained the project will generate a proposal with recommendations and a 'route map' of how activities for local conservation could be implemented and what would be the roles of market mechanisms and more stringent regulations. We are optimistic that the project findings can be implemented due to the enthusiasm among landowners and citizens when surveys were applied. Moreover we are particularly encouraged that a pilot project over an area of around 1000 ha is under design, which will transfer half a million GBP for a period of ten years to the local community. At a higher policy level the network created will help to position the recommendations and findings of the research in the local policy making processes. The research is also being followed up in other sites in Mexico through a Dutch Research Council project involving the project partners.

9. Dissemination

In addition to the dissemination of the information and findings of the research in the conferences listed in Table 2, the project received attention of newspapers and Arturo Balderas was interviewed for a local TV program focused on rural development issues and that it was broadcasted at a national level. Here is the summary of the presence and mentions of the project in the local media.

TV Coverage.

6 Julio 2010, Interview of Arturo Balderas for the program El Campo, by the nationally awarded environmental journalist Agustin del Castillo. Canal 6.

Newspaper coverage.

The tree with the largest DBH record during the fieldwork in 2009 was identified as an emblematic tree in La Primavera:

-Celebran a un Encino Centenario. El Mayor Arbol Identificado en La Primavera.

<http://impreso.milenio.com/node/8796953>, Milenio Newspaper. 9 July 2010.

The participation of M.Sc. Jennifer White and Scooby from the Conservation Canines group was covered by the media:

-Scooby and the Cat Scat: canine detective aids Primavera rangers.

<http://guadalajarareporter.com/columns-mainmenu-94/john-pint-mainmenu-48/27209-scooby-and-the-cat-scat-canine-detective-aids-primavera-rangers.html> Guadalajara Reporter, English Spoken Weekly - Newspaper for the American Community in Jalisco. 19 July 2010.

-Alianza Entre Especies. Milenio Newspaper. Profile Jennifer White and Scooby.

<http://www.milenio.com/node/484377>. 10 July 2010.

-En La Primavera, la vida se abre paso entre obstáculos. Corredores de Fauna.

<http://impreso.milenio.com/node/8794151>, Milenio Newspaper, 4 July 2010.

The Project has been successful in including the topic of biological corridors in the public discussion.

-La Primavera, inmersa en procesos de extinción. Milenio Newspaper.

<http://impreso.milenio.com/node/8922367> 6 March 2011.

10. Project Expenditure

Table 3 project expenditure during the reporting period (1 April 2010 – 31 March 2011)

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 (individuals and organisations as per the project application modified on 1 Sept 2009)			
Overhead costs			
Travel and subsistence			
Operating costs			
Capital items/equipment (specify)			
Others: Consultancy			
Others (please specify)			
TOTAL			

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

There are three components that could potentially be used for publicity purposes. 1. Habitat conservation for large cats. 2. Results from the WTP analysis that demonstrate a 'Yes in my backyard' preference. 3. Conservation implementation with Selva Negra and Mana. However we would prefer publicity to be released when 1. Analysis of big cat scats has been completed. 2. We are submitting the YIMBY results to a high impact journal and a requirement is to hold publicity until the paper has been accepted. 3. Selva Negra and Mana do not want to publicise the reforestation project until it has been successfully implemented.

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2010-2011

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
<p>Goal: <i>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</i></p> <ul style="list-style-type: none"> ⇒ The conservation of biological diversity, ⇒ The sustainable use of its components, and ⇒ The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 		<p>A pilot project is being designed that may benefit 400 families of one ejido and will help conserving 1000 ha and reforesting 80 ha. The project started thanks to the initiative of a local company.</p>	
<p>Purpose Identification of the potential of a local payment scheme for environmental values independent from public budget in La Primavera to provide resources for rural development, enhancing ecosystem services, protecting biological corridors and halting land-use change in the oak-pine forest.</p>	<p>Project findings show the recommended implementation stages to develop the local market, the potential areas to work in, the estimated carbon content and expected project's costs, the willingness to supply by landowners and willingness to pay by population/organizations.</p>	<p>The feasibility of a local mechanism in La Primavera cannot be assessed yet until the figures of willingness to supply are obtained. However results from the demand side analysis are promising since potential buyers will be more motivated to collaborate in market based schemes for forest carbon services when proximate forests are eligible. There will be a higher probability of participation and willingness to pay.</p> <p>Impacts of forest fires this year may be critical since meteorological conditions (e.g. patterns related to El Nino) are similar to those prevailing in 2005 when the last large fire in La Primavera occurred.</p> <p>Assumptions - Environmental valuation expressed by the participants in the surveys reflects their true intentions and are enough to cover the implementation, transaction and</p>	<p>Key Actions Year 3: Presentation of Results to CONAFOR and stakeholders.</p> <p>Design of Pilot Project and proposal for voluntary markets.</p> <p>Integration of Final Report and Publications.</p>

		<p>opportunity costs of the scheme.</p> <p>-Local, regional and national policymakers positively receive this kind of policy instrument.</p> <p>Atypical massive forest fires do not occur changing the estimated carbon estimations.</p> <p>Truthful participation of landowners in the surveying process.</p> <p>Truthful participation of citizens, institutions and organizations in the surveying process.</p> <p>Local, regional and national policymakers remain open to the approval of this kind of instruments</p>	
<p>Output 1. Carbon content in vegetation within La Primavera and its immediate surroundings, and carbon sequestration potential for areas that can be restored by reforestation estimated.</p>	<p>Maps and Satellite images showing estimated carbon content and potential sequestration for the 30,500 ha of La Primavera and the biological corridors in 30,000 ha of the surrounding area.</p>	<p>The information for the creation of the maps for oak-pine forests has been gathered and articles to present the findings are under preparation.</p>	
1.1 Identify the biological corridors and delimit study area		Completed.	
1.2 Classify the study area according to land-use and tree crown		Completed.	
1.3 Set carbon measuring points and field work logistics		Completed.	
1.4 Provide training to work team		Completed.	
1.5 Perform field work		Completed	
1.6 Data analysis to determine carbon content and sequestration potential		Completed. The results based on the forest inventories and potential	

		carbon sequestration by tree AGB are completed. Analysis of canopy cover in satellite images has been done. The final version of the map for Output 1 will be completed as part of the writing and dissemination activities of this component and the overall report. We expect to have more information from CONAFOR regarding the national REDD+ baseline and more details arising from the UNFCCC COP 17 about specific methodological issues.
1.7 Writing and dissemination of the first part of the report		On going. The information of the potential growth curves and carbon content in AGB was presented during the 2nd International Symposium of Carbon in Mexico. Two papers targeting peer reviewed journals (e.g. Biotropica, Forest Ecology and Management) are under preparation. Uncertainty analysis according to GPLULUCF will be included
Output 2. Implementation, transaction and opportunity costs, and landowners' willingness to conserve/supply ecosystem services in La Primavera and surrounding area assessed.	Costs curves for the 30,500 ha of La Primavera and in 30,000 ha of the surrounding area, showing project's viability. 90 surveys from landowners in the 13 ejidos comprising La Primavera.	The implementation, transactions and opportunity costs have been estimated. The surveys to assess the willingness to participate in conservation and reforestation practices have been applied. The information required for the preparation of Output 2 is available. The application of more surveys in the biological corridors is under consideration.
2.1 Identify the strategies to conserve and enhance carbon services		Complete. Specifications for reforestation and conservation practices for the pilot project have been developed. These are based on CONAFOR best management practices and from the KTGAL and general forest inventory practices for community forest monitoring.
2.2 Identify the technical requirements and local costs (transport, plant production, biodiversity issues labour and materials)		Complete. Requirements and resources required have been identified as part of the Pilot project currently under development in the biological corridor.
2.3 Identify transaction costs of the UNFCCC REDD and Voluntary Market Schemes		On time 75%. The costs of the Voluntary Market Schemes are identified, the costs of REDD+ are not yet defined. REDD+ will be driven at the country level so transaction costs associated with project development, registration and monitoring are still not clear. It is likely that these costs will be borne by the federal government. A REDD+ pilot project is under development in the Coastal Area of Jalisco, and one of the project participants Margaret Skutsch (CIGA) is working closely with CONAFOR in this project. Arturo Balderas is also working on these activities and in

	the forthcoming year findings of the Darwin Project will be presented with the objective of assessing inclusion of local valuation mechanisms as part of REDD+ activities. The values used by default for the development or projects oriented to compliance markets will be those associated with CDM reforestation/afforestation projects..
2.4 Identify the local opportunity costs in the study area (land use and productivities)	Completed based on regional agricultural production statistics and surveys of landowners.
2.5 Design the surveying instrument to verify local opportunity costs and willingness to supply the environmental services	Completed. A choice experiment survey was designed and tested. The survey focused on evaluation of factors that may enable landowners to join conservation and restoration projects. The effect of a PES like payment per hectare per year, the number of years in which this is received and the potential access to co-benefits (e.g. support of alternative productive projects and employment) has been assessed. After exploratory interviews were undertaken it was decided to change the approach of the survey from solely a reforestation project for carbon sequestration, to a conservation and restoration approach. This was decided after considering the high opportunity costs of agricultural land and the ethical implications of reducing food output. If we had included payments that matched high opportunity costs, the survey designed would have presented unrealistic payments (e.g. the productivity of sugar cane plantations in the region is around \$US 6,000/ha-yr)
2.6 Define the logistics to apply the surveys/workshops	Complete. Contacts were established with the association of landowners and the ejidos of La Primavera and the Federation of Small Landowners of the State of Jalisco, for the coordination and application of surveys. The managerial office also provided support.
2.7 Provide training to the work team	Complete. Three persons were trained for the application of surveys/interviews
2.8 Apply the surveys to verify opportunity costs and determine willingness to supply	Complete. The 90 surveys originally planned have been applied. As well as the ejidos, surveys have also been applied to non-ejido landowners with properties inside and outside the protected area. The application of more surveys in the area of the biological corridor of Ahuiscolco where the pilot project is under development is being considered.
2.9 Data analysis to determine the costs and willingness to supply	On time, on-going, approximately 20% complete, initial statistical analyses have been developed and coding of the data is under way. The analysis will be completed during the first semester of year three.

2.10 Writing and dissemination of the second part of the report		On time.
Output 3. Local financing potential for ecosystem conservation and restoration in the Guadalajara Metropolitan Area, expressed on a per ton-CO ₂ basis estimated.	<p>Financing potential from survey results and estimation for Guadalajara's Metropolitan Area following the socioeconomic and demographic profiles.</p> <p>300 surveys from citizens, institutions and organizations from Guadalajara Metropolitan Area.</p>	The surveys were applied and a pilot project involving local companies and NGOs is being designed. The information for the integration of Output 3 has been gathered. The collaboration with the PEACC will help to gather more detailed information related to GHG inventories and mitigation activities specially outside the metropolitan area of Guadalajara.
3.1 Identify the general profile of citizens, institutions and organization in GMA from official statistics		Completed.
3.2 Define the subsample for each representative group		Completed.
3.3 Design the surveying instrument to assess carbon footprint, financing potential and preferred scheme		Completed. The use of national income-expenditure statistics for quick carbon footprint estimations for households was presented as part of the 2nd International Symposium of Carbon. A choice experiment was designed to assess the effect of project location of the valuation of forest carbon services among citizens. Specific characteristics of the potential schemes and financial options were also included.
3.4 Define the strategy to apply the surveys/workshops		Complete. Surveys were applied both on-line and in market stall sessions within the metropolitan area of Guadalajara. Due to the current situation in Mexico, special attention was paid to security issues. Contact was established to representatives of neighbourhood associations to safely schedule the sessions for the application of surveys.
3.5 Provide training to work team		Five people were trained on how to conduct market stall sessions and apply choice modelling surveys.
3.6 Apply the surveys to assess carbon footprint, financing potential and preferred scheme		A total of 342 surveys were applied in person and a further 1100 were applied on-line to test the differences between different sampling procedures. These surveys targeted citizens, including entrepreneurs from different productive sectors. The figures of the potential participation will be complemented with the results arising from the PEACC and the pilot project.

3.7 Data analysis to determine local financing potential on a per ton-CO2 basis		On time, 50%, Estimates of the valuation of forest carbon services by citizens have been obtained.
3.8 Writing and dissemination of the third part of the report		On time.
Output 4. Voluntary market-based for environmental services valuation and rural development in La Primavera and its immediate surroundings proposed.	Critical route for the development of the proposed scheme. Technical documents proposed for the operation and follow up of the scheme.	The activities of this section have already started, they are on time. The development of a demonstrative pilot project may open the door for a widespread implementation of a local valuation mechanism.
4.1 Define the characteristics of the proposed market-based scheme		Without changes.
4.1 Define the characteristics of the proposed market-based scheme		On time, 50%, Basic aspects related to the motivation for participation, payment vehicle, periodicity, and management were included in the WTP surveys; this information will be complemented with the findings of the PEACC surveys, the WT supply questionnaires being applied and interviews to key stakeholders.
4.2 Identify and contact the relevant, local, regional and national actors involved in environmental incentives policymaking		Completed.
4.3 Consult the relevant actors involved in policymaking about feasibility of the proposed scheme		On time 50%, Ten semi structured interviews have been conducted and a further ten are planned. Relevant actors have been consulted also as part of the design of the Pilot Project.
4.4 Identify the critical route for development of the proposed scheme		Without changes.
4.5 Elaborate the final technical documents and training material proposed for the operation and follow up of the scheme		Without changes.
4.6 Dissemination of the proposed scheme among relevant local stakeholders		Without changes.
5.1 Quarterly Report		Activities and preliminary results have been presented to the executive office of La Primavera and other participating institutions.
5.2 Yearly Reports		Without changes.
5.2 Final Report		Without changes.

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>La Primavera's Oak-Pine forest is well conserved and landowners are receiving incentives from a local environmental valuation market; new areas have been reforested inside and outside the Natural Protected Area creating biological corridors, halting habitat loss and increasing the probability of maintaining a viable habitat for cougars (<i>Puma concolor</i>).</p>	<p>-Proposal for a Voluntary Market Scheme based on the results of this project, including the following:</p> <ul style="list-style-type: none"> -Satellite surveys and maps indicating potential areas for reforestation/forestation. -Landowners' willingness to provide the environmental services. -Guadalajara's society willingness to pay for these services. 	<p>-Surveys hard copies and analysis.</p> <p>-Satellite images and data from the forest inventory of the National Forestry Commission (CONAFOR) and technical information from La Primavera Management Office.</p> <p>-Voluntary Market Scheme Proposal.</p> <p>-DI Closed Project Evaluation.</p>	
<p>Purpose</p> <p>Identification of the potential of a local payment scheme for environmental values independent from public budget in La Primavera to provide resources for rural development, enhancing ecosystem services, protecting biological corridors and halting land-use change in the oak-pine forest.</p>	<p>Project findings show the recommended implementation stages to develop the local market, the potential areas to work in, the estimated carbon content and expected project's costs, the willingness to supply by landowners and willingness to pay by population/ organizations.</p>	<p>Voluntary Market Scheme Proposal obtained as a result of this research project and surveys results.</p>	<p>-The environmental valuation expressed by the participants in the surveys reflect their true intentions and are enough to cover the implementation, transaction and opportunity costs of the scheme.</p> <p>-Local, regional and national policymakers positively receive this kind of policy instrument.</p>

<p>Outputs</p> <p>1. Carbon content in vegetation within La Primavera and its immediate surroundings, and carbon sequestration potential for areas that can be restored by reforestation estimated.</p>	<p>Maps and Satellite images showing estimated carbon content and potential sequestration for the 30,500 ha of La Primavera and the biological corridors in 30,000 ha of the surrounding area.</p>	<p>The body of the report and a map scale 1:50,000.</p>	<p>Atypical massive forest fires do not occur changing the estimated carbon estimations.</p>
<p>2. Implementation, transaction and opportunity costs, and landowners' willingness to conserve/supply ecosystem services in La Primavera and surrounding area assessed.</p>	<p>Costs curves for the 30,500 ha of La Primavera and in 30,000 ha of the surrounding area, showing project's viability.</p> <p>90 surveys from landowners in the 13 ejidos comprising La Primavera.</p>	<p>The body of the report and a map scale 1:50,000.</p> <p>Landowners' surveys.</p>	<p>Truthful participation of landowners in the surveying process.</p>
<p>3. Local financing potential for ecosystem conservation and restoration in the Guadalajara Metropolitan Area, expressed on a per ton-CO₂ basis estimated.</p>	<p>Financing potential from survey results and estimation for Guadalajara's Metropolitan Area following the socioeconomic and demographic profiles.</p> <p>300 surveys from citizens, institutions and organizations from Guadalajara Metropolitan Area.</p>	<p>Body of the report and surveys</p>	<p>Truthful participation of citizens, institutions and organizations in the surveying process.</p>
<p>4. Voluntary market-based for environmental services valuation and rural development in La Primavera and its immediate surroundings proposed.</p>	<p>Critical route for the development of the proposed scheme.</p> <p>Technical documents proposed for the operation and follow up of the scheme.</p>	<p>Voluntary market-based scheme proposal.</p>	<p>Local, regional and national policymakers remain open to the approval of this kind of instruments.</p>

Activities (details in workplan)

- 1.1 Set carbon measuring points and field work logistics
- 1.2 Provide training to work team
- 1.2 Perform field work
- 1.3 Data analysis to determine carbon content and sequestration potential
- 2.1 Identify the technical, transaction and opportunity costs
- 2.2 Provide training to the work team
- 2.3 Apply the surveys to verify opportunity costs and determine willingness to supply
- 2.4. Data analysis to shape the supply side of the scheme.
- 3.1 Identify the general profile of citizens, institutions and organization in the Metropolitan Area of Guadalajara
- 3.2 Provide training to work team
- 3.3 Apply the surveys to assess carbon footprint, financing potential and preferred scheme
- 3.4 Data analysis to shape the demand side of the scheme
- 4.1 Define the characteristics of the proposed market-based scheme
- 4.2 Consult the relevant actors involved in policymaking about feasibility of the proposed scheme
- 4.3 Identify the critical route for development of the proposed scheme
- 4.4 Data analysis and writing of the final report
- 4.5 Dissemination of results

Monitoring activities:

Quarterly, yearly and final reports including measurement of project's progress providing quantifiable follow-up and description of tasks realized, specifically progress in measuring points in the study area, surveying process (landowners, citizens, organizations and institutions), and main results obtained.

Proposed updated version of the timetable.

Activity	Months	Year 1				Year 2				Year 3			
		1	2	3	4	1	2	3	4	1	2	3	4
1.1 Identify the biological corridors and delimit study area	1 Completed	X											
1.2 Classify the study area according to land-use and tree crown	1 Completed	X											
1.3 Set carbon measuring points and field work logistics	1 Completed	X											
1.4 Provide training to work team	1 Completed	X											
1.5 Perform field work	7 Completed	X	X	X									

1.6	Data analysis to determine carbon content and sequestration potential	3 Completed			X	X								
1.7	Writing and dissemination of the first part of the report	5 On time est. 75%.					X					X	X	
2.1	Identify the strategies to conserve and enhance carbon services.	5 Completed						X	X					
2.2	Identify the technical requirements and local costs (transport, plant production, biodiversity issues labour and materials)	2 Completed						X	X					
2.3	Identify transaction costs of the UNFCCC REDD+ and Voluntary Market Schemes	1 On Time, est. 75%				X	X	X	X	X	X			
2.4	Identify the local opportunity costs in the study area (land use and productivities).	2 Completed						X						
2.5	Design the surveying instrument to verify local opportunity costs and willingness to supply the environmental services	2 Completed				X	X	X						
2.6	Define the logistics to apply the surveys/workshops	1 Completed						X						
2.7	Provide training to the work team	1 Completed						X						
2.8	Apply the surveys to verify opportunity costs and determine willingness to supply	6 Completed							X	X				
2.9	Data analysis to determine the costs and willingness to supply	4 On Time est. 20%								X	X			
2.10	Writing and dissemination of the second part of the report	4 On time.									X	X	X	
3.1	Identify the general profile of citizens, institutions and organization in GMA from official statistics.	1 Completed				X								
3.2	Define the subsample for each representative group	1 Completed				X								
3.3	Design the surveying instrument to assess carbon footprint, financing potential and preferred scheme	3 Completed				X	X							

3.4	Define the strategy to apply the surveys/workshops	1 Completed					X							
3.5	Provide training to work team	2 Completed					X							
3.6	Apply the surveys to assess carbon footprint, financing potential and preferred scheme	7 Completed					X	X						
3.7	Data analysis to determine local financing potential on a per ton-CO2 basis	5 est. 50%							X	X	X			
3.8	Writing and dissemination of the third part of the report	4 est. 50%									X	X	X	
4.1	Define the characteristics of the proposed market-based scheme	1 est 50%.						X	X	X	X			
4.2	Identify and contact the relevant, local, regional and national actors involved in environmental incentives policymaking	2		X						X				
4.3	Consult the relevant actors involved in policymaking about feasibility of the proposed scheme	5								X	X	X		
4.4	Identify the critical route for development of the proposed scheme	3 On time.								X	X			
4.5	Elaborate the final technical documents and training material proposed for the operation and follow up of the scheme	3 On time										X	X	
4.6	Dissemination of the proposed scheme among relevant local stakeholders	3 On time.											X	X
5.1	Quarterly Report	3 On time.	X	X	X	X	X	X	X	X	X	X	X	
5.2	Yearly Reports	3 On Time.			X				X				X	
5.3	Final Report	1												X

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

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	Yes. 4.19MB
Is your report more than 5MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	No
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes. Abstract and posters included that provide details of project results.
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	