

Darwin Initiative – Final Report

(To be completed with reference to the Reporting Guidance Notes for Project Leaders (<http://darwin.defra.gov.uk/resources/reporting/>)

it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Darwin project information

Project Reference	EIDPO033
Project Title	Integrating local communities and science: management of La Amistad (Costa Rica-Panama)
Host country(ies)	Costa Rica, Panama
UK Contract Holder Institution	Natural History Museum, London
UK Partner Institution(s)	Natural History Museum, London
Host Country Partner Institution(s)	Instituto Nacional de Biodiversidad de Costa Rica (INBio), Autoridad Nacional del Ambiente de Panamá (ANAM)
Darwin Grant Value	£90,999
Start/End dates of Project	1st September 2009 to July 31 2011
Project Leader Name	Alex Monro
Project Website	http://www.inbio.ac.cr/pila-darwin/paginas/avances/extension.html
Report Author(s) and date	Frank González, Alex Monro, Oscar Chacón, Vilma Obando, Yesenia Villalobos. September, 2011.

1 Project Background

PILA is a 4,000 km² UNESCO world heritage site straddling Costa Rica and Panama. It is managed by a Binational Commission and surrounded by a buffer-zone in which local communities live. Hunting and agricultural incursions are indication of the local communities in the buffer-zone's struggle for economic survival. Future risks identified are the planned construction of hydroelectric plants and the impacts of climate change on the high elevation areas. A UNESCO fact-finding mission reported in 2009 that PILA lacked a coherent management plan and that indigenous and non-indigenous stakeholders were not sufficiently involved in the management of the Park.

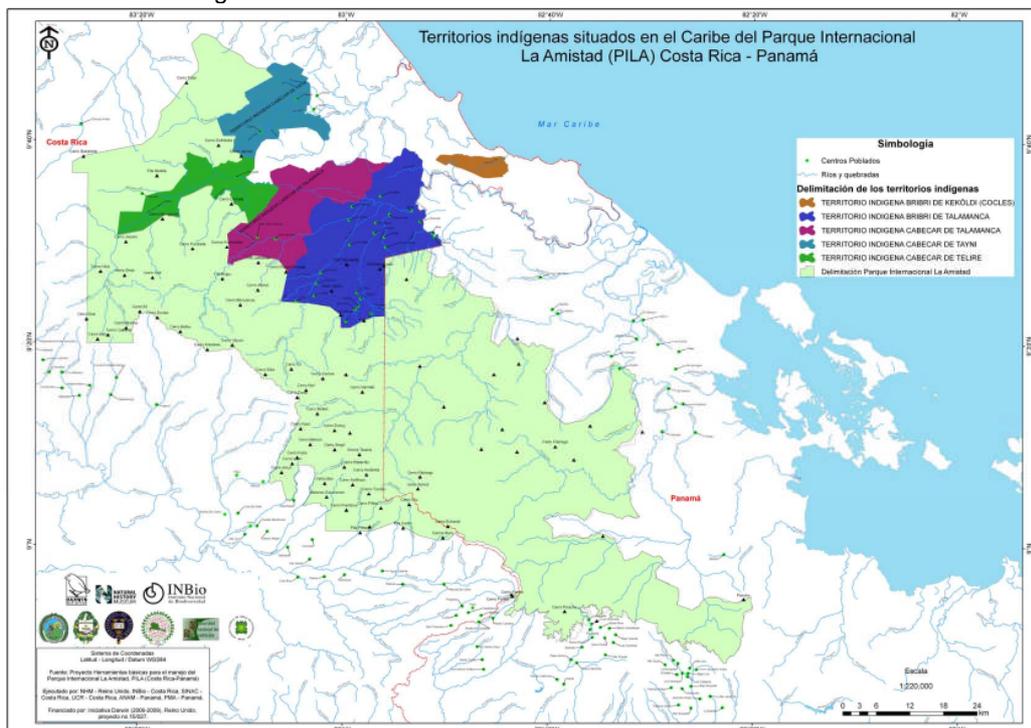


Fig. 1. PILA (light green) and local indigenous communities participants of the project (grey blue, green, purple, dark blue).

2 Project support to the Convention on Biological Diversity (CBD)

The project has contributed to articles 10 (Sustainable use of components of biological diversity), 12 (Research and training) and 13 (Public education and awareness). In addition the project has contributed to the following cross-cutting issues: Climate Change and Biodiversity, Global Strategy for Plant Conservation, Global Taxonomy Initiative, Impact assessment, Protected areas, Sustainable use of biodiversity, Tourism and biodiversity, and, Traditional knowledge, innovations and practices.

Overall this project has strengthened the links between the civil society interacting with PILA and a large number of state agencies in both Costa Rica and Panama responsible for the management of natural resources and the welfare of these communities (MTSS of Costa Rica). The project has also generated local capacity and education that will foment greater environmental awareness from within communities that will in all likelihood spread to communities that did not participate directly in this project.

Article 10 (Sustainable use of components of biological diversity)

The Project has established capacity amongst communities within PILA's buffer zone to generate economic revenue from the Park in a sustainable manner. Specifically through eco-tourism activities that use the Park's cultural, aesthetic and scientific resources in a non-extractive manner and without the establishment of any permanent infrastructure within PILA. In addition, the project has helped strengthen the traditional and sustainable indigenous agricultural through polyculture through through the joint publication with INBio of 'Policultivo Indígena de Talamanca y la Conservación de la Naturaleza' (see Annex 5). Polyculture avoids the need for agrochemicals and slash and burn systems, thereby reducing the pressure to constantly clear forest.

Article 12 (Research and training)

Important research and training has been undertaken within the project whose aim has been to assess and mitigate threats to PILA, generating the capacity and inter-institutional Networks to assess and monitor those threats. With respect to training, local community members have been trained to become accredited tour guides for PILA and encouraged to take responsibility for the health of the Park.

Research into assessing and mitigating threats to PILA built on baseline data generated as part of the main project (15-027). Specific research outputs include 1) a synthesis of the main perceived threats to PILA from indigenous communities, Government and Intergovernmental agencies in Costa Rica and Panama and the scientific perspective of project partners INBio, Universidad de Costa Rica (UCR) and NHM, 2) an assessment of rates of deforestation within PILA since 1986 using a combination of remote sensed data and ground patrols and, 3) the production of a set of mitigating actions for consideration by the Binational Commission responsible for the management of PILA.

Training has taken the form of the formal course-based activities that will result in the accreditation of tour guides and the sharing of skills and ideas through the execution of the project. One example of this has been to develop the capacity of local community leaders to incorporate course participants in the decision making process as it relates to environmental issues. This has resulted in over 50% of the course participants being selected by the local indigenous governments (ADITIBRI etc) to become 'resource guards' for their communities from 2012, a formal role within their indigenous governments. Another example is the network of experts that have worked towards the common goal of identifying and mitigating threats to PILA between the Government agencies responsible for the management of PILA (ANAM, SINAC), the Ministry of Agriculture (MAG), GIS specialists at INBio, taxonomic specialists at UCR, NHM and INBio, conservation specialists at The Nature Conservancy (TNC), anthropologist Carlos Borges and local community leaders and indigenous Governments. The common experience and different perspectives learnt through this project can be considered a significant, if informal, training element.

Article 13 (Public education and awareness)

The training course provided education and awareness to participants. It also contributed to an awareness community-wide in three ways: 1) course participants returned to their community and will share their knowledge and enthusiasm within their communities, by working as guides

they will also demonstrate the ability to generate economic value from PILA in a non destructive manner, 2) many of the course participants have become recognized within their communities as 'experts' on biodiversity and the environment thereby enabling them to inform their communities through more formal channels such as meetings of elders, and 3) the training courses were operated at an educational centre known as 'La Finca Educativa'. This establishment provides is the main centre for education, culture and political discussion in Talamanca (district in which Costa Rican, Caribbean PILA located) and has links to the only university-based presence in the region: Universidad Estatal a Distancia de Costa Rica (UNED). This project increased the centre's capacity to incorporate biodiversity and conservation issues in its permanent exhibitions and teaching meaning that in the future indigenous young people training as farm assistants will also gain some knowledge and understanding of biodiversity and its conservation. This is undoubtedly a clear contribution to the indigenous territories' education and awareness of the value of the living resources.

Climate Change and Biodiversity cross-cutting issue

As part of the report on risks and mitigating actions to PILA presented to the Binational Commission, and in the checklist to the vascular plants of the Park (in press) we have highlighted the areas most at threat to Climate Change.

Global Strategy for Plant Conservation cross-cutting issue

Publications produced as a result of the main project but being published during the course of the post project include a first checklist to the 3,088 vascular plant species of PILA (Monro et al. in press) and conservation assessments to 200 keystone species within the Park (Rodriguez et al. 2011). These contribute to targets I and II of the Global Strategy for Plant Conservation.

Traditional Knowledge, innovations and practices cross-cutting issue

An important component of the training course produced as part of this project was the recognition and harnessing of the cultural value of biodiversity within traditional indigenous culture. As highlighted in previous reports each individual within a community is assigned to clans that relate to an animal, plant or locality within PILA. As well as being a sophisticated system to prevent in-breeding within a community, clan membership is associated with responsibilities with respect to the designated clan animal / plant / locality. Currently many of the younger community members were unaware of this tradition and one of the outcomes of this course was to promote an awareness and interest in this tradition. It is also of course makes a very good source of material for tour guides.

Another achievement of this project was a joint collaboration between INBio, NHM and TNC that resulted in the publication of a summarizes 30 years of research by anthropologist Carlos Borge into the traditional polyculture system of farming used by the Talamanca Indians. Borge highlights the conservation value and efficiency as a means of food production of this system. The publication of his work will see this recognized within Costa Rica and legitimize its promotion within environmentally sensitive areas e.g. the network of Conservation Areas within the country. It also documents the establishment and maintenance of these systems and so supports its applications in areas where local knowledge has been lost.

Protected areas cross-cutting issue

Both the main and post project aim to support and improve the management of PILA, a binational protected and World Heritage Property.

Sustainable use of Biodiversity cross-cutting issue

PILA is an extremely valuable natural resource for Panama and Costa Rica mainly for its role in water management and potential for hydropower generation. Demand for both these resources is growing faster and faster. This project is contributing to mitigating these pressures by providing high quality scientific data to inform decision-making with respect to exploiting these resources sustainably. Data ranges from the first unified map to the vegetation of the Park, baseline biodiversity data, the quantification of rates of deforestation and identification of areas of unsustainable use. The project has also established capacity for an alternative non-extractive and sustainable use of PILA's resources through ecotourism.

Tourism and Biodiversity cross-cutting issue

Ecotourism is a major source of foreign exchange for both Costa Rica and Panama. Well planned and focussed tourism may be the most efficient way to use PILA's natural resources. Making the primary actors in this industry the indigenous / local custodians and owners of these resources has been at the core of this post project and we believe it represents the most effective way to reduce negative impacts from local communities such as deforestation. Not only because it provides an alternative source of income but also because it alters the perceived value of those resources.

3 Project Partnerships

The development of relationships throughout this project has been of vital importance. This is especially the case when working with parties where complete trust is vital and a precursor to any collaboration, as is the case with indigenous groups. With good reason, the indigenous peoples with whom this project partnered do not recognise the significance of legal or written agreements with respect to establishing trust. Trust is based instead on extensive discussion and reciprocal visits between parties i.e. personal contact and this formed a major element of the preparation of this proposal but also the first few months of project activity.

During this project there have been significant changes in the composition and roles of partners as a consequence of events outside of our and their control. Below is a comprehensive of the project partners during the course of the project.

ANAM- Chiriquí, Panamá: With responsibility for Panama's sector of PILA ANAM was a key and active partner to the main project and one of the main proposers of the post project. They contributed to the assessment of land cover for PILA and in the ground patrols of the buffer zone. As CBD Focal Point for Panama ANAM also played an important institutional role promoting the project within the Binational Commission and contributed to the identification of threats to the park and its buffer zone. ANAM was also a valuable facilitator with respect to establishing relationships with indigenous and non indigenous settlers adjacent to PILA especially in the preparation phase of the post project proposal.

Asociación de Desarrollo Integral del Territorio Indígena Bribri de Talamanca (ADITIBRI), Costa Rica: Indigenous government of the Bribri territory. Facilitated and coordinated participation from the Bribri community in Costa Rica and Panama and with the neighbouring Cabecar indigenous government. Within Talamanca (area within Costa Rica and Panama in which PILA is located) ADITIBRI is the indigenous government with the greatest influence and capacity and is frequently the sole government to raise and follow-up issues within the area. They therefore represented a key partner for delivering the training course and for enabling and participating in the ground patrols of the buffer zone. An MOU was signed INBio and ADITIBRI as part of this project in 2010.

Asociación de Desarrollo Integral del Territorio Indígena Cabécar (ADITICA), Costa Rica: Indigenous government of the Cabecar people they participated in the training course. Their participation was of great importance as the Cabecar occupy the mid elevation range within Talamanca and so a greater proportion of their communities make up the Park's buffer zone. The Cabecar have a strong historical relationship with the Bribri and the two often represent each other jointly. Towards the end of the project ADITICA and INBio decided to sign an MOU so as to facilitate collaborations in the future.

Asociación Unión Guabo-Dacle Bribri (ASOGUADABRI), Panamá: NGO representing several Panamanian Bribri communities. This organization participated in the training course. Together with ASOKEKOLDI this organization has the most experience of working with ecotourists within Talamanca and they receive a steady flow of tourists arriving through Costa Rica. Together with ASOKEKOLDI, ASOGUADABRI will be key to integrating or facilitating the development of ecotourism amongst other other less experienced indigenous groups.

Borge, Carlos: Anthropologist with over 30 years ethnographic research experience with the Talamanca indigenous groups. Carlos is one of the main consultants working on indigenous issues in the region and advisor to local indigenous governments. His role in developing and facilitating relationships and agreements between the indigenous Governments and the project partners was crucial to the success of this project.

Estudios Proyectos y Planificación (EPYPSA): This organization raised funds to train fifteen members of indigenous communities as park guards (Bribri and Cabecar) subsequent to their employment monitoring their territories within PILA's buffer zone. With the support of ADITIBRI we were able to negotiate with EPYPSA that candidates selected were drawn from the pool of students trained by this project. Thereby building on the skills acquired through this project. This will result in more informed / aware park guards and represents an important consolidation of the role of indigenous communities in the management of PILA.

Asociación Finca Educativa, Costa Rica: Is a non-profit organisation administered by ADITIBRI located in the community of Shiroles. It includes facilities such as a hostel, dining room, meeting rooms, areas of secondary forest and a plantation of organic cocoa the latter two including a network of trails. It represents the most important site for tourism within the Bribri territory and is the major meeting place for both the Bribri and Cabecar communities and the equivalent of their Parliament. Contact between the students and *Finca Educativa* were developed in negotiation with INBio and through the training course as a field site. Students have produced interpretations for the network of paths running through the secondary forest that promotes the biodiversity and its value to visitors, mainly from within the indigenous community.

INBio: Responsible for coordinating project activities in Costa Rica and Panama and served as the main contact for the project within these countries and indigenous communities. In addition INBio took the initiative to raise additional funds from MAG to provide a nominal income for course participants and from the Ministry of Labour and Social Security of Costa Rica (MTSS) to obtain the funds needed to compensate for TNC withdrawing from the project during 2010.

The Kekoldi Development Association (ASOKEKOLDI), Costa Rica: a Bribri NGO that participated in the training course. Together with ASOQUADABRI, ADIKEKOLDI is one of the organizations with greatest experience of ecotourism. Each organisation is centred at opposite ends of PILA and so the participation of both parties a connection that spans the entire Caribbean border of PILA.

The Ministry of Labour and Social Security of Costa Rica (MTSS): MTSS being involved in the project at a late stage but was key to its implementation by providing funds to facilitate the continued participation of students on the training course and si reduce the risk of students dropping out. This involved the signing of an agreement between INBio and MTSS for the project.

SINAC: With responsibility for Costa Rica's sector of PILA, SINAC provided institutional support through their endorsement of the post project and participation on the patrols of the Park's buffer zone. SINAC played a major role in the identification of threats to PILA and how these could be presented to the Binational Commission. I addition SINAC helped identify funds that would compensate for the withdrawal of TNC from the training course.

TNC: Acted as broker for the project with the indigenous communities during the preparation of the project proposal and initial stages of the project. TNC were also a major partner in funding the training course and had committed to funding part of the course. During 2010, however, given the financial situation of TNC in the US the organization withdrew much of its support from Costa Rica and so was unable to meet its commitments to this project. Once it was clear that TNC would need to withdraw from the project their personnel helped facilitate the necessary relationships with the state agencies that ultimately resulted in the funds to complete the project becoming available.

UCR: The herpetology group at UCR have contributed to the assessment of threats to the amphibian fauna of PILA. They are also beginning to publish the results of the main project which include several new species descriptions.

The partnerships developed as part of this project represent an important legacy. It also demonstrates to all parties their willingness to work towards the protection of PILA and to do so

in a strategic manner. Most notable has been the partnerships with the indigenous communities governments who were initially suspicious and unenthusiastic of the prospect of collaborating with national government agencies.

4 Project Achievements

See Annex 1

4.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

Project impacts on the biodiversity, sustainable use and equitable sharing of biodiversity benefits have been:

- The publication of 200 regional species conservation assessment and a checklist to the vascular plants of PILA, undertaken as part of the main project, in peer-reviewed journal. These provide valuable baseline data for the Park's management.
 - The identification of anthropogenic threats (deforestation, hunting, mineral exploration) to PILA.
 - Developed a new sustainable livelihood for communities occupying PILA's buffer zone through the training of 22 tour guides who will receive accreditation in 2012. Guides recognised by the Binational Commission, Government agencies and the indigenous communities targeted.
 - The documentation and recognition of the indigenous polyculture system of agriculture through the joint publication of Carlos Borge's ebook 'Policultivo Indígena de Talamanca y la Conservación de la Naturaleza'
 - The assessment of rates of deforestation within PILA at three points in time from 1986 to 2011 through the publication of a report compiled by the project team,
 - Assessment of threats and conservation strategies for PILA
- In addition to the above the project has strengthened strategic partnerships between the parties responsible for the management of PILA: communities occupying the Park's buffer zone and access to the Park, local scientific capacity . This should have a positive impact on both PILA's management and on the Park's sustainability. Specifically by:
- Supporting the consolidation of the trained tour guides through the creation of an association of local indigenous tour guides, the first for the Caribbean sector.
 - Supporting the more active participation of indigenous groups in PILA's Management, thereby making the Park's Management more inclusive. This was achieved through the presence and participation of indigenous Government representatives at Binational Commission meetings, the plan to incorporate indigenous community members in the monitoring and maintenance of the buffer zone – park border, the allocation of funds to train 15 community members as Park guards. Training which will be overseen by Project Partners. That the Park's Management becomes more inclusive is important for the Park's future. PILA currently faces a number of threats from illegal mining and hydroelectric projects around its periphery and so needs a more active monitoring and management. The newly agreed management plan for PILA needs to be accepted and known about by those communities who de-facto control much of the access to the Park and mediate much of the impact within it. Illegal mining activities within PILA are a good example of this. Indigenous communities had observed and known about these activities for several months, yet there was no knowledge about this amongst SINAC and ANAM until this project undertook patrols and consulted with communities.
 - Supporting and strengthening the sustainable elements of indigenous cultural heritage through a dedicated training module and the publication of a book documenting and promoting indigenous polyculture within indigenous Talamanca communities.

4.2 Outcomes: achievement of the project purpose and outcomes

Output 1. Main risks to the biodiversity and livelihood value of PILA identified and plans to mitigate those risks in place.

Indicator 3: *Local community awareness of the biodiversity value of PILA and its buffer zone assessed through workshops at the beginning and end of the project.*

Activity 1.1: *Assessment of the main threats to PILA undertaken in consultation with local communities, park authorities, national governments and NGO's.*

How threats were identified

Threats were identified through workshops with indigenous groups, indigenous group own assessments of risks, consultation with TNC, ANAM and SINAC together with field observations and the analysis of remote sensed data.

Threats identified

Bribris and Cabecares jointly proposed a management plan for the indigenous territories in Talamanca which includes PILA and its Caribbean buffer zone. This proposal included a comprehensive list of threats: agricultural encroachment; the presence of non-indigenous people practicing unsustainable agriculture; the lack of coordination between development projects in the area; the constant pressure on the Park's natural resources by external and international agents; the lack of participation of local communities in the management of PILA; the lack of an integrated strategy for the protection of PILA; the deterioration of the standard of living of indigenous communities; and little coordination of binational actions for the protection and development of local communities and PILA. At the project workshop ADITIBRI and ASOGUADABRI identified hunting, deforestation for timber and mining as the main risks to PILA and its buffer zone. Mining has also been identified as a risk by TNC. ANAM identified hunting and deforestation together with the absence of sustainable economic development for agriculture as risks.

Activity 1.2: *Assessment of the integrity of the buffer zone and border of PILA based on patrols and remote sensed satellite data*

Methodology

Changes in land use were measured using a synthesis of remote sensed data, grey-literature review for PILA and fieldwork. Activities were divided into three phases.

- Phase 1: the selection of the optimal remote sensed data from SPOT, ASTER and LANDSAT with the requirement that images have less than 20% cloud cover, that 5 years of images can be obtained and that the spectral resolution is sufficient to generate 10 classes; 2) patrols of the border of PILA with its buffer zone using and ground-truthing the preliminary analyses of the remote-sensed data. Sites to patrol were jointly selected by ASOGUADABRI, ADITIBRI, the project team, ANAM and SINAC.
- Phase 2: processing of remote sensed data to highlight pasture and deforested land cover. This is to be achieved by optimising the contrast of the images by applying a radiometric treatment and by highlighting spectral bands commonly associated with agriculture e.g. those associated with exposed soil. By comparing three images over fifteen years we were able to identify which biodiversity zones were most vulnerable, also which of the threats identified were increasing most rapidly.
- Phase 3: the supervised classification of remote sensed data integrating the ground-truthed observations from buffer zone patrols. Two field trips were undertaken, in February and March 2011, on which nine sites were ground-truthed.

Activity 1.3: *Establish an action plan to mitigate the threats identified through actions 1.1 and 1.2 and as part of the main project*

A draft outline of mitigation actions was submitted to SINAC. ANAM and SINAC suggested that the project provide a more exhaustive assessment of the risks to PILA instead of an action plan designed to mitigate threats. The justification for recommending this change was that the Binational Commission's management plan for PILA, not approved at the time of the post project's proposal has since been approved. Within this a plan for the mitigation of threats was undertaken by TNC between 2005 and 2008, the highest priorities actions recommended under this plan are currently being undertaken by ANAM and SINAC. As part of these recommendations a more detailed assessment of the integrity of the buffer zone and of rates of deforestation within the Park were identified as priorities and so it was on these actions that this project focussed more strongly. Recommendations to mitigate the revised assessment of threats were identified in the report '.

Output 2. Local communities' capacity to generate livelihoods from the park improved by providing them with the capacity to work as guides or parataxonomists for ecotourists, park authorities and researchers improved.

Indicator 2: *Training course provision will be assessed by the course coordinator and the participants themselves following each course, course quality will be ensured by the national accrediting authority*

Activity 2.1. *Training courses in the provision of guide services and participatory biodiversity inventories (leading to national accreditation)*

22 students have been trained as ecotourism guides. The original proposal was to train a total of 32 community members. This number was reduced to 22 because of the reduced availability of funds (associated with TNC's withdrawal) and the difficulty of obtaining participants who would be willing and able to commit to the duration of the training course (17 months). Participants are from communities in or adjacent to the buffer zone of PILA and they are recognised within their communities as being trained as guides. Guides can make 30\$ per day, substantially more than they could obtain through other work (\$7-10 per day). Visits to PILA are typically of several days and involve porters (the terrain is very steep) and so it is likely that guides will hire additional local labour. It is to be expected that most of this income will remain within the communities

This issue of availability and the cost to participants of participation in terms of lost income was addressed after the participants had been selected and resulted in the support of \$200 a month per participant from the MTSS. Support for this project by MTSS totalled \$26,000. The shortfall in funds resulting from TNC's withdrawal meant that we were able to undertake less of the course modules than anticipated. The course leading to accreditation was originally planned to include 19 modules, ten to be funded by this project, nine by TNC. Because of the reduced number of participants we were able to fund 12 modules, leaving a shortfall of seven modules for accreditation. The project team worked very hard to secure additional funds but after a promising start with Costa Rica's Ministry of Agriculture received and the Interamerican Development Bank (see 2010-2011 Annual Report), with limited success. The project team were able to obtain funds from EPYPSA to fund one of the outstanding modules. And in testimony to the strength of commitment from our indigenous community communities, the project team are exploring further funding opportunities through ADITIBRI and ADITICA and we are planning for the courses to resume at which time they will be undertaken by Finca Educativa under the supervision of INBio beginning later this month and finishing December 2010. In all likelihood these will be self-financed by ADITIBRI and ADITICA

Modules taught to date are indicated in Table 1 (below).

As a result of the above the 22 participants have not received accreditation from Instituto Nacional de Aprendizaje (INA). INA has accredited all of the modules completed and on completion of the remaining six courses participants will receive full accreditation. A lack of full accreditation from INA does not preclude participants working as tour guides and some participants

The conservation of PILA will depend on the decisions and actions of the population living within the buffer zone. Previous training of this type undertaken by INBio on the Pacific sector of PILA resulted in the political and social status of participants being significantly increased so that guides become local leaders with a heightened awareness of biodiversity and conservation issues and of the regional importance of PILA. We hope, anticipate and have seen the first signs of this with this project.

Table 1. Detalle de talleres de capacitación impartidos

Module	Instructor	Date	Funder
Local indigenous culture	Oscar Almengor, Aditibri	March 2010	Darwin Initiative
Environmental interpretation Part 1	Felipe Quirós, INBio.	March 2010	Darwin Initiative
Diversity and natural history of plants	Armando Soto & Nelson Zamora, asistencia Frank González. INBio	April 2010	Darwin Initiative
Diversity and natural history of birds	Margherita Bottazzi, Consultora. Asistencia Luis Hernández, Red Quercus.	May 2010	Darwin Initiative

Diversity and natural history of mammals	Álvaro Herrera, INBio	June 2010	Darwin Initiative
Diversity and natural history of amphibians and reptiles	Ignacio Arroyo, consultor y Álvaro Herrera, INBio. Asistencia de Carlos Godínez, Red Quercus	June-July 2010	Darwin Initiative
Diversity and natural history of insects	Instructores de la unidad entomología INBio: *Ángel Solís (Escarabajos), Carlos Víquez (Arañas y escorpiones), Guillermo Chaverri (Insectos acuáticos), Carlos Hernández (Grillos), Manuel Solís (Moscas y Avispas) & José Montero (Mariposas).	July-August 2010	Darwin Initiative
Diversity and natural history of fungi and lichens	Milagro Mata & Daniela Lizano, INBio. Asistencia Daniela Torres, Red Quercus	August 2010	Darwin Initiative
Conservation biology	Randall García, INBio, Asistencia de Andrea Torres, Red Quercus	August 2010	Darwin Initiative
Environmental interpretation Part 2	Alejandro Calvo y Olman Alvarado, INBio	September 2010	Darwin Initiative
Fundamentals of tourism	Mildred Acuña, Consultora	September 2010	Darwin Initiative
Indigenous heritage and folklore	Mildred Acuña, Consultora	September 2010	Darwin Initiative
Geography	Mauricio Zamora, INBio	August 2011	EPYPSA-INBio

Indicator 2.2: *Over half of the local communities within the buffer zone surrounding PILA are obtaining revenue by acting as guides with PILA.*

We trained 22 guides from 14 indigenous communities. To date six are participating in tourist activities and 15 will work as paid Park Guards, so slightly over a half of what we were aiming for. However, we expect that once the training modules are completed, the phenomenon of communities becoming aware of and organising themselves to cater for eco tourists in Yorkín, Soki, Uatsi, and Gavilan will result in more than half, if not all of the participants obtaining revenue as guides. The indirect benefits of tourism may outweigh the direct benefits: because of the remoteness of the communities tourists must remain for at least 2 days and consume food, lodging and transportation. Given the demand for these services, small-scale trade relations are established (mainly food and souvenirs) among community members which in turn increases the community capacity to cater and benefit of from tourism.

Indicator 2.3: *Number of tourists that use PILA has increased by 1/3.*

Although it was not possible to obtain baseline figures for the number of tourists visiting PILA and its buffer zones a number of the communities have been approached by tour operators servicing the neighbouring tourist areas of Bocas del Toro, Puerto Viejo and Cahuita. There is a growing interest to diversify the existing tourism offer, including cultural and natural history elements of the indigenous territories and PILA (Rafael Cabraca, Finance Director of the association of indigenous tour guides 'Asociación de Guías de Turismo de Territorio Indígena de Talamanca', Pers. Comm., 2011)

In addition to growing interest from outside tour operators, indigenous communities are showing a higher level of organization and coordination with respect to managing and encouraging eco tourism. For example, in the Bribris of Soki and Yorkin communities, the guides in training, in conjunction with community members are identifying tourist activities that take advantage of the scenic and cultural wealth of the community. In this respect the training of tour guides is generating direct benefits at a community level. For example, the creation of a nature trail and bird-watching tours.

Output 3. Local communities' awareness of the national, regional and global biodiversity value of PILA and its buffer zone increased.

Indicator 3: *Local community awareness of the biodiversity value of PILA and its buffer zone assessed through workshops at the beginning and end of the project.*

Activity 3.1. *Public awareness and dissemination activities to raise awareness within the local communities of the national, regional and global biodiversity value of PILA and their buffer zone.*

Three workshops of 25-35 participants were undertaken to identify the most appropriate mechanisms to influence local perceptions of the biodiversity value of PILA. Participants included course students, key players in the indigenous governments and representatives of the Red Quercus project (see post project application). Two of these workshops formed part of the training course and was also attended by key figures from indigenous communities of both the Pacific and Caribbean sectors. The Conservation biology training module was attended by experts in biological conservation issues from INBio and SINAC.

The first workshop was held in March 2010 and attended by representatives of ADITIBRI and ACOMUITA as well as the training participants. This workshop identified indigenous community perspectives of the value of biodiversity. Noteworthy is the close relationship between man and nature within the indigenous community world view and the receptivity to the concept of biodiversity as a human right.

The second workshop held in August 2010 aimed to document the perception that the indigenous communities have of their territories in terms of spatial arrangement, natural and economic value and of the threats to this value.

The third workshop was held in October 2010 and consisted of an exchange of experiences between representatives of indigenous communities from both the Pacific and Caribbean sectors of PILA, together with representatives of SINAC. As part of this workshop participants visited communities in the more developed Pacific sector of the park with the aim of observing the results of a previous TNC-INBio initiative, Red Quercus. Following the workshops participants initiated a number of activities promoting the biodiversity value of PILA within their communities. For example, improvement of the environmental education infrastructure at the Finca Educativa in Shiroles, the most important location for meeting and training for the Talamanca indigenous communities.

Additionally the project team promoted the biodiversity value of PILA as documented by the main project and ensuing publications within the national media resulting in 5 media events. (details of these outreach activities in Annex 4).

Output 4. Revised management plan for PILA, which recognises the central role of local communities and includes an action plan for the mitigation of the main risks to PILA implemented.

Indicator 4. *Regular reports and updates will be made to the Binational Commission and all Commission meetings will be represented by the project*

Activity 4.1. *Action plan incorporated into the PILA Management Plan through consultation and workshops with the Binational Commission*

Project recommendation to the Binational Commission (see Technical report to the Binational Commission, SINAC, ANAM, Appendix 5) were submitted to the Commission in 2010. The Commission's response to this was that the recommendations will be taken into consideration.

Activity 4.2. *The central role of local communities in the sustainable use and survival of PILA to be clearly stated in the PILA Management Plan and representatives of local community associations to be given membership of the Binational Commission*

The indigenous Governments (ADITIBRI and ADITICA) have made significant progress towards their inclusion in the decision making apparatus for PILA. Guillermo Rodríguez, Bri Bri leader developed a management plan for PILA (and the broader Biosphere Reserve) which promotes the role of indigenous communities and submitted this to the Binational Commission. The strategy of this project was to meet its objectives by supporting and promoting this plan by lobbying the Binational Commission. This was facilitated by the signing of an MOU between

INBio and ADITIBRI). The Commission accepted this recommendation and as a result the role of indigenous communities in the management of PILA has increased. This is most clearly manifested in the allocation by the Binational Commission of the role of monitoring and patrolling of PILA's buffer to the indigenous communities and the allocation of funds by BID-Sixaola to a project management consultancy (EPYPSA- see above) to train fifteen park guards from the communities represented by ADITIBRI. Training began in August, 2011.

4.3 Outputs (and activities)

Did the project achieve its outputs as laid out in the logical framework?

The project has met all of its activities and outputs with the exception of the number of participants trained (see below), their full accreditation and the granting of full membership to the Binational Commission of indigenous Governments and non-indigenous local community representatives. Membership of the Binational Commission is by appointment of the Governments of Costa Rica and Panama. Although our lobbying has seen the role of indigenous communities in the management of the park recognised and increased. For example, their training and employment as park guards for the buffer zone. It was maybe over ambitious of us to expect the Government to involve non- Government partners outside of a technical role.

An area where the project was particularly successful was in establishing the links between all of the players involved in the management of PILA. The signing of an MOU with ADITIBRI was particularly significant with respect to this and will enable INBio, as a non-governmental technical body to continue to play such a role with respect to PILA and equivalent situations well into the future.

Whilst for financial reasons outside of our control we were not able to undertake all of the training modules as planned, we would argue that the fact that the indigenous Governments are planning to undertake and complete the modules under the supervision of INBio is a major indicator of the projects impact on these communities and of their commitment and enthusiasm for developing and harnessing this source of revenue. It should also ensure that students acquire full accreditation within the next few months.

The project was also successful at communicating / integrating the considerable base of baseline information and knowledge of PILA generated by the main project PILA with indigenous groups and with tools for the management of PILA and its buffer zone. The training courses raised the bioliteracy of the participants and of their communities. The two technical reports submitted to the Binational Commission included a summary of the biodiversity importance of PILA and a synthesis of the threats to PILA identified by the post project, indigenous communities and NGOs such as TNC.

Did the project encounter problems, either anticipated or unexpected, in achieving the outputs, and how were they resolved?

In response to a substantial drop in its own funding our co-funder of the training courses and project partner, TNC withdrew from the project. This meant that we were short of 50% of the funds needed to implement the training. As a consequence we decided to reduce the number of students trained, from 32 to 22 and to seek additional funds elsewhere. The project team used the savings from a reduced number of participants to fund a greater proportion of the course modules without compromising their quality. The INBio team were able to lobby Costa Rica's Ministry of Agriculture to use funds from the Interamerican Development Bank (Banco Interamericano de Desarrollo) to meet the remaining shortfall. This was initially successful but then succumbed to Government tendering processes and the funds lost. Latterly have agreed to collaborate with the indigenous NGO Finca Educativa to deliver the remaining course modules.

4.4 Project standard measures and publications

See Annex 4

4.5 Technical and Scientific achievements and co-operation

Technical and scientific:

We developed an approach for comparing satellite data of different resolutions and completeness and using it to estimate changes in vegetation cover (see attached report, 'Evaluación de amenazas antrópicas en la en el Parque Internacional La Amistad PILA y su zona de amortiguamiento'). This involved standardising the exclusion of cloud cover, correcting

for different image resolutions and extrapolating to excluded areas. During the course of the post project we published the conservation assessments undertaken as part of the main project in a peer-reviewed journal and have had the checklist to the vascular plant flora of PILA accepted for publication, again in a peer-reviewed journal. We plan to publish a further two scientific articles outlining the methodology used for the delimitation of biodiversity zones in PILA and an assessment of the conservation status of PILA.

The training courses module on indigenous heritage and folklore will probably have been the most impactful. This was for two reasons: 1) it publicised a number of aspects of indigenous culture that had fallen into disuse amongst members of the communities leading to a resurgence of interest. For example, the clan system and its association to biodiversity and specific places within PILA. 2) Indigenous heritage, being very much landscape and nature dependent provides a strong rationale for using PILA and its buffer zones in a sustainable manner. Promoting these elements establishes a foundation for the conservation and sustainable use of PILA and its diversity. The project's joint publication of Carlos Borge's documentation of indigenous polyculture systems will also contribute to the promotion and conservation of indigenous traditional sustainable farming practices.

We also developed a course layout and structure that was tailored to the indigenous groups with whom we are working. This involved running the course as a series of modules delivered at weekends, the use of indigenous experts as far as possible and the adaptation of existing teaching materials and media. For example the use of pictograms / maps to identify and classify resources and threats in buffer zone territories.

Co-operation

We hope to attract interest from third parties in the UK, US and Central America to work on the data that we have accumulated through the main project. We are beginning two small scale collaborations with Neil Brumitt (NHM) and a PhD student from Cambridge University looking at the use of geo-reference data in delimiting species ranges for conservation assessments. I have also been in touch with the UNESCO World Heritage Centre Chief of the Latin America and Caribbean Unit, Nuria Sanz, to promote our project's achievements and identify areas for future collaboration and plan to meet with her in late November or December 2011.

4.6 Capacity building

How has the capacity of host county partners been increased as a result of the project and what is the evidence for this?

Tools to monitor assess and prioritise the biodiversity of PILA

ADITIBRI, ADITICA, ASOGUADABRI

The training programme added value to the tools and data produced as part of the main project. It has done so by providing trainees with the capacity to use and understand the tools but also by raising awareness within communities of their existence and potential uses. This is of particular relevance with respect to the unified map of biodiversity zones and the species web pages for plant, amphibian and dung beetle diversity. Trained participants will be able make use of this information to monitor the diversity of their own territories / communities but also to provide a better service to their clients when working as tourism guides, field assistants or park guards.

Capacity to generate additional income in a sustainable manner.

ADITIBRI, ADITICA, ASOGUADABRI, Finca Educativa

Through the training courses members of 14 indigenous communities have acquired the capacity to generate income from the provision of services to eco tourists and other visitors to the Park.

Network for the communication and decision-making in Caribbean sector of PILA buffer zones

ANAM, ADITIBRI, ADITICA, ASOGUADABRI, ASOKEKOLDI, Binational Commission, INBio, MTSS, NHM, UCR, SINAC, University of Panama.

As part of this project we established a network of partners far more diverse than originally planned. This includes two different Governments, three Government Ministries, two indigenous Governments and four scientific institutions. This network evolved to meet project objectives and overcome some of the obstacles encountered. It will likely play an important role

in dealing with some of the imminent threats to PILA (mining, hydroelectricity). It could also play a role in responding to UNESCO World Heritage missions.

Adaptation of training systems and content to indigenous cultures. Establishing a protocol for collaborations with indigenous communities

INBio, Finca Educativa, NHM

Through the execution of this project INBio learnt to adapt its training systems and course content to a new user-group. Indigenous communities have priorities, established ways of negotiating and behaviours which differ in a number of respects from much of Costa Rica's non-indigenous society. They do however represent an important sector of Costa Rican society and occupy strategically important sites with relation to many protected areas in Costa Rica and Panama. They will likely be of increasing importance as pressure on protected areas grows and as buffer zones need to be managed more actively. INBio is likely to be one of the main institutions providing training to these communities. In addition this project represented the first time that INBio developed a collaboration with an indigenous Government or community and whilst the process of doing so was not easy it now has the knowledge and capacity to develop future collaborations.

4.7 Sustainability and Legacy

Which project achievements are most likely to endure?

Training: most of the training participants are already available to work or beginning to work as tour guides or park guards. Given the economic situation within their communities such a source of revenue is likely to remain attractive for the foreseeable future, or at least as long as eco tourists continue to visit Costa Rica. In addition there is an enthusiasm for such work as it represents a means of valorising and promoting indigenous culture.

Incorporation of indigenous groups on Binational Commission: It seems likely that the influence of indigenous communities with the Binational Commission should continue to grow. Given the tiny number of Costa Rican and Government park guards in the Caribbean sector of PILA (ca 10 in total, of which none regularly patrol within the Park) there seems to be an appreciation from the commission members that indigenous communities represent a good source of monitoring and information on what is happening in PILA. In addition the UNESCO World Heritage Commission's has recommended their integration to the decision-making process.

Raising awareness of indigenous groups of the value of PILA, their territories as buffer zones, and themselves as stewards / custodians, getting commission to see this too: the training course raised awareness amongst participants of the influence of PILA on their culture and folklore, most of whom belong to a generation that has only superficial awareness of their folklore. Within Bri Bri and Cabecar folklore PILA represents the place where man was created by the god Sibó. It also includes a number of localities and animals with which each clan is affiliated. In addition the course highlighted the biodiversity value of PILA to Costa Rica and Panama, the high level of endemism and its importance as a high elevation forest resource at a regional level. By placing their territory and PILA within a broader context we were therefore able to raise it's perceived value. Both of these outcomes should strengthen the motivation for conserving / protecting PILA in addition to the material benefits that may be obtained from tourism.

Network established: one of the major achievements of this project was the establishment of a broad network of Government, indigenous and NGO parties with INBio and the project team serving as facilitators. Prior to this project no such network existed. Such a network will be essential for the sustainable management of PILA, regardless of national legislation. None of the parties to the network depend on project funding and so should continue after project funding ceases (which is still the case in October 2011). For example, an MOU has been signed between INBio and ADITIBRI, between INBio and MTSS, an MOU between INBio and ADITICA is in the process of being agreed, ADITIBRI, ADITICA and EPYPSA are working together to train 15 park guards, the Governments of ASOKEKOLDI, ADITICA, ADITIBRI, ASOQUADABRI have formed an alliance, Carlos Borge works with both the indigenous governments and SINAC in relation to land management in PILA and the indigenous territories, and a working relationship is developing between post project trainees and Red Quercus.

Baseline for monitoring change in deforestation: the post project produced maps of deforested areas in PILA for the years 1986, 2001 and 2011 using remote-sensed data. This enabled rates of deforestation and changes in the rate of deforestation to be calculated between the periods 1986-2001 and 2001-2011. Current estimates indicate a reduction in the mean annual rate of deforestation. Data for subsequent years will enable increases in the rate of deforestation to be identified quickly and easily. The approach used, which was calibrated for cloud cover and differences in image resolution should support the monitoring of deforestation rates for the foreseeable future.

Raising profile and awareness of sustainable indigenous agricultural techniques for buffer zone: an additional output of this project was the joint publication of an ebook on the indigenous polyculture systems of the indigenous groups of the Talamanca mountains, which include the communities that surround PILA. This publication represents the first detailed documentation of these systems and will remain a valuable resource within Costa Rica, Panama and academia for many years to come.

What will happen to project staff and resources after the project ends?

Data resources in the form of satellite data will remain in Costa Rica and Panama, scientific knowledge will be published in peer-reviewed journals and disseminated amongst the project partners.

Staff: the project team hired by the project returned to their jobs at INBio and so will remain active.

Are partners likely to keep in touch? See 'Network established' above.

5 Lessons learned, dissemination and communication

Key lessons

An important lesson learnt is that indigenous communities have a distinct vision and concept of chronology which is very much process driven and less concerned with deadlines, facts or results. It was therefore important to understand, respect and make sure that the processes met with the needs and expectations of these communities. This may have involved increased expense, delayed or missed deadlines but was a prerequisite to establishing good relations with these communities. Given the central role that these communities played in the project this was imperative for the project's success. Once the project was trusted to respect these requirements by the communities than a tremendous amount of goodwill and commitment was released in return and this proved crucial to delivering key elements of the project.

This project worked with a broad range of partners, each with their own objectives and motivations. The project team, Frank Gonzalez and Vilma Obando in particular exhibited great diplomacy and understanding in ensuring the post project's delivery and deserve much of the credit for its success.

We also learnt to be flexible in terms of deliverables and to focus on the broader aims of the project: to incorporate indigenous communities in the management of PILA, empower them to generate an income from PILA and to make use of the scientific outputs of the main project.

5.1 Darwin identity

The DI logo was included in all course and dissemination material. The project is known throughout Costa Rica and Panama simply as the Darwin Initiative project. The Darwin Initiative was included in all media interviews and acknowledged in all of the scientific publications that resulted from the project.

There is a clear and positive image of the DI in both countries, especially in terms of the institutions responsible for managing natural resources. By funding these projects, which have a high impact on the region (as was clearly demonstrated in the DI regional workshop in Rio de Janeiro in 2009), the Initiative has achieved a strong and positive reputation in the region.

6 Monitoring and evaluation

Two changes reflected in the logical framework were made:

1. The total number of students selected for training: this was a consequence of a change in financial resources to the project and also a consequence of the fact that communities selected participants themselves and did not see the need and or availability of 32 participants.

2. The number of newsletters published: this was reduced to four from six. This was in part the result of issues to do with the dissemination of indigenous people's knowledge raised by the Nagoya Protocol. This delayed outreach and forced to reduce the amount of circulated newsletters.

6.1 Actions taken in response to annual report reviews

We recieved no response to any of our HYR or Annual report.

7 Finance and administration

7.1 Project expenditure

Item	Budget	Expenditure	£ Variance	% Var	Comments
Staff costs specified by individual				-98%	Due to the changes arising from the non-participation of one of the major partners into the project (TNC) a greater investment of time by the project team (especially Vilma Obando, Oscar Chacon and Frank Gonzalez) was necessary to carry out the project objectives. The functions included fund raising, maintaining strategic partnerships across the wider project (INBio-ADITIBRI agreement, INBio-MTSS agreement) and negotiations with the Epypsa, the organization responsible to continue some of the activities related with the training for the indigenous tourist guides. Further details of these processes can be verified elsewhere in the final technical report. Furthermore, Frank Gonzalez completed a Masters degree in late 2010 and is therefore required by Costa Rican legislation to be paid at a significantly higher rate than was initially budgeted. It is also mandatory in Costa Rica to increase wages each semester, which again was not taken into consideration within the initial budget. Another factor that continues to further exacerbate the variances is the poor exchange rates received from money transfers from UK to Cost Rica. Salaries are fixed USD amounts, thus the GBP value of these is subject to fluctuation compared to the initial budget.
Overhead costs				100%	As per above reallocation
Travel and subsistence				89%	As per above reallocation
Operating costs				80%	As per above reallocation
Capital				n/a	n/a
Others: Consultancy				n/a	n/a
Others				n/a	n/a
TOTAL					

7.2 Additional funds or in-kind contributions secured

NHM has contributed in-kind staff support and overheads costs towards the management and administration of the project totalling over £40k over the lifetime of the project. INBio has similarly contributed in-kind staff and overheads costs of more than £63k over 2 years. MTSS £17k of funding to facilitate the attendance of course participants.

7.3 Value of DI funding

It is worth highlighting again the maximization of funds was needed to complete the project. While this is a project that was budgeted funds 50% and 50% DI TNC funds is clearly evident that the project was well above 80% and was achieved only with funds DI therefore be said the economic contribution of DI was enough beyond the proposed.

Annex 1 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.		This project is attempting to consolidate the efforts that for several years TNC has been doing regarding the integration of local actors in a network with a common agenda that allowing them to make decisions impacting and generating positive actions towards to a comprehensive management of their territories. This would allow the impact of threats to the park is minor and resolved in the best way.	<i>(do not fill not applicable)</i>
Purpose To increase the capacity and ability of local communities to use PILA in a sustainable manner whilst ensuring that the central role played by local communities in PILA's continued survival is recognised by national and binational authorities.	Majority of local communities able to increase their revenue through the provision of local guides. The management plan for PILA explicitly recognises the central role played by local communities in the park's survival is operational.	Twenty-two students have maintained their participation over the year that the course modules have been taught. Many of these students have become leaders in local tourism in communities in both countries.	
Outputs 1. Main risks to the biodiversity and livelihood value of PILA identified and plans to mitigate those risks in place.	A report and action plan submitted to the Binational Commission and agreed.		
Activity 1.2 Assessment of the integrity of the buffer zone and border of PILA based on patrols and remote sensed satellite data		Nine sites within the buffer zone have been visited during the course of two fieldtrips. Fieldtrips included representatives of INBio, ADITIBRI, ANAM and the Ministry of Public Security of Costa Rica. Evidence of illegal and clandestine helipads associated with illegal mining encountered. In July 2011 we completed the analyses and compiled a report detailing changes in forest cover between 1986, 2001 and 2011.	
Activity 1.3 Establish an action plan to mitigate the threats identified through actions 1.1 and 1.2 and as part of the main project.		The different project outputs have been used to prepare a final report recommending actions to mitigate the threats to PILA and recommendations for the implementation of the management and	

		conservation plan for PILA. These take into into account criteria identified by ANAM and SINAC and will be presented at the Binational Commission for approval at the next Commission meeting.
Output 2. Local communities' capacity to generate livelihoods from the park improved by providing them with the capacity to work as guides or parataxonomists for ecotourists, park authorities and researchers improved.	32 members from 4 communities trained and given accreditation guides Over half of the local communities within the buffer zone surrounding PILA are obtaining revenue by acting as guides with PILA Number of tourists that use PILA has increased by 1/3	22 students from 14 communities completed 11 of a total of 19 course modules. Modules completed have been accredited by INA. Funds from EPYPSA recently negotiated by the project team have paid for a twelfth module and we hope to complete the remaining modules and have them accredited by INA through a direct collaboration with ADITIBRI and ADITICA which they will undertake themselves. The remaining modules refer to the more administrative and safety elements of tour guide accreditation for which there is capacity within some of the communities.
Activity 2.1. Training courses in providing guide services and participatory biodiversity inventories (leading to national accreditation)		Four course participants took part in field visits in and around PILA's buffer zone. Two of the participants currently work as park guards for ADITIBRI. ADITICA has expressed interest in hiring at least two other participants as park guards for it's territory. A group of students is already active in local tourism in the Yorkin, Tsoki and Bribri communities. Other indigenous community memebbers have also been involved in these activities.
Output 3. Local communities' awareness of the national, regional and global biodiversity value of PILA and its buffer zone increased.	Local communities' perceptions of PILA's biodiversity value assessed prior and subsequent to training.	Training activities were developed that created awareness of PILA's biodiversity value and of the important role this played in their cultural heritage. Trainees are being recognised as sources of information on biodiversity and environmental issues within their communities. 12 trainees are being trained to serve as park guards within the indigenous territories.
Activity 3.1 Public awareness and dissemination activities to raise awareness within the local communities of the national, regional and global biodiversity value of PILA and their buffer zone		Four press articles (three national, one international) have been published on the biodiversity and conservation value of PILA and of threats to that value. Some of these are available online. In addition newsletters have been disseminated by email and through the project website: http://www.inbio.ac.cr/pila-arwin/paginas/resultados/boletines.html#post . - The project coordinator has supported the consolidation of the participants into an organization for tour guides of the buffer zone of PILA. Participants have taken part in at least two community meetings in which they have introduced themselves and their expectations with respect to

		<p>their role as tour guides and with the implementation of environmental policies within their territory territory.</p> <p>- Twenty-two participants worked on the production of interpretation materials of ADITIBRI's Finca Educativa.</p>
<p>Output 4. Revised management plan for PILA, which recognises the central role of local communities and includes an action plan for the mitigation of the main risks to PILA implemented.</p>	<p>Revised management plan agreed by the Binational Commission.</p>	<p>The report on conservation strategies for PILA produced as part of this project (see Annex 5) emphasised the need to involve and integrate indigenous communities. In collaboration with indigenous Governments the project team supported the training of indigenous community members as park guards (also referred to as resource guards) who will participate directly in the management of the Caribbean sector of the Park.</p>
<p>Activity 4.1 Action plan (1.3 above) incorporated into the PILA Management Plan through consultation and workshops with the Binational Commission</p>		<p>The project team participated in the three meetings of the Binational Commission held during course of the post project with the aim of communicating project outputs (risk assessments, action plan, training), identifying management indicators and future research needs.</p>
<p>Activity 4.2 The central role of local communities in the sustainable use and survival of PILA to be clearly stated in the PILA Management Plan and representatives of local community associations to be given membership of the Binational Commission</p>		<p>Whilst there is no statement about the role of indigenous communities in the management plan agreed for PILA, two representatives of the local indigenous governments attended the last meeting of the Binational Commission responsible for coordinating the management of PILA. In addition there has been an increased participation of indigenous governments in the management of PILA as indicated by their training and employment as park guards.</p>

Annex 2 Project's final logframe, including criteria and indicators

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>			
<p>Sub-Goal: To ensure that the biodiversity and livelihood value of PILA's forests continues to be well conserved and sustainably used by the local communities that live within PILA's buffer zone.</p>	<p>Land patrols and satellite data confirm that the buffer zone and border of PILA are maintained.</p> <p>The management plan of PILA recognises the central role of local communities and the need for sound scientific knowledge to underpin decision-making.</p>	<p>Data submitted to the Binational Commission and included in the minutes of the Commission meetings.</p> <p>Data published online and where appropriate in a peer-reviewed publication in Costa Rica or Panama.</p> <p>A revised management plan is published by the Binational Commission in which the role of local communities and scientific data is explicitly stated.</p>	
<p>Purpose To increase the capacity and ability of local communities to use PILA in a sustainable manner whilst ensuring that the central role played by local communities in PILA's continued survival is recognised by national and binational authorities.</p>	<p>Majority of local communities able to increase their revenue through the provision of local guides.</p> <p>The management plan for PILA explicitly recognises the central role played by local communities in the park's survival is operational.</p>	<p>Number of guide-days in year following training included in DI annual report.</p> <p>Management plan published and available online.</p>	<p>The way in which local communities use PILA plays a determining role in the Park's survival</p> <p>That local communities have a central role to play in PILA's management</p>
<p>Outputs 1. Main risks to the biodiversity and livelihood value of PILA identified and plans to mitigate those risks in place.</p>	<p>A report and action plan submitted to the Binational Commission and agreed.</p>	<p>Report published online and included in Annual Report</p>	<p>Threats to the biodiversity and livelihood value of PILA identified as part of the original project are real</p> <p>That the sustainability of PILA depends on the local communities living in the buffer zone surrounding the park</p>

<p>2. Local communities' capacity to generate livelihoods from the park improved by providing them with the capacity to work as guides or parataxonomists for ecotourists, park authorities and researchers improved.</p>	<p>32 members from 4 communities trained and given accreditation guides Over half of the local communities within the buffer zone surrounding PILA are obtaining revenue by acting as guides with PILA Number of tourists that use PILA has increased by 1/3</p>	<p>1a Training workshop reports and evaluation 1b Report and evaluation summary by project coordinator</p>	<p>Ecotourism in PILA will continue to grow as it has over the last three years. That PILA represents a valuable resource to local communities and one which can be used sustainably or not</p>
<p>3. Local communities' awareness of the national, regional and global biodiversity value of PILA and its buffer zone increased.</p>	<p>Local communities' perceptions of PILA's biodiversity value assessed prior and subsequent to training.</p>	<p>1a report of assessment produced</p>	<p>Local communities recognise buffer zone as important to ensuring PILA's survival Local communities understand the national, regional and global importance of biodiversity and ecosystem services</p>
<p>4. Revised management plan for PILA, which recognises the central role of local communities and includes an action plan for the mitigation of the main risks to PILA implemented.</p>	<p>Revised management plan agreed by the Binational Commission.</p>	<p>Revised management plan available online and appended to final report.</p>	<p>Binational Commission continues to be the main vehicle for the transnational management of PILA All Binational Commission members continue to be project partners or associates</p>
<p>Activities (details in work plan)</p> <p>1.1 Assessment of the main threats to PILA undertaken in consultation with local communities, park authorities, national governments and NGOs</p> <p>1.2 Assessment of the integrity of the buffer zone and border of PILA based on patrols and remote sensed satellite data</p> <p>1.3 Establish an action plan to mitigate the threats identified through actions 1.1 and 1.2 and as part of the main project</p> <p>2.1 Training courses in providing guide services and participatory biodiversity inventories (leading to national accreditation)</p> <p>3.1 Public awareness and dissemination activities to raise awareness within the local communities of the national, regional and global biodiversity value of PILA and their buffer zone</p> <p>4.1 Action plan (1.3 above) incorporated into the PILA Management Plan through consultation and workshops with the Binational Commission</p> <p>4.2 The central role of local communities in the sustainable use and survival of PILA to be clearly stated in the PILA Management Plan and representatives of local community associations to be given membership of the Binational Commission</p>			
<p>Monitoring activities:</p> <p>Indicator 1: Change to buffer zone vegetation cover and PILA border based on a comparison of a ground survey and remote sensing to the baseline produced by the main project</p> <p>Indicator 2: Training course provision will be assessed by the course coordinator and the participants themselves following each course, course quality will be ensured by the national accrediting authority</p> <p>Indicator 3: Local community awareness of the biodiversity value of PILA and its buffer zone assessed through workshops at the beginning and end of the project</p> <p>Indicator 4: Regular reports and updates will be made to the Binational Commission and all Commission meetings will be represented by the project</p>			

Annex 3 Project contribution to Articles under the CBD

Project Contribution to Articles under the Convention on Biological Diversity

Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use		Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring		Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation		Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	50	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures		Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training	25	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	20	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.

Article No./Title	Project %	Article Description
17. Exchange of Information		Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution	5	Smaller contributions (eg of 5%) or less should be summed and included here.
Total %	100%	Check % = total 100

Annex 4 Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1a	Number of people to submit PhD thesis	
1b	Number of PhD qualifications obtained	
2	Number of Masters qualifications obtained	1 Frank González Project Management, 2011
3	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	
4b	Number of training weeks provided to undergraduate students	
4c	Number of postgraduate students receiving training (not 1-3 above)	
4d	Number of training weeks for postgraduate students	
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(ie not categories 1-4 above)	
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	22 people trained and certified by the Instituto Nacional de Aprendizaje of Costa Rica.
6b	Number of training weeks not leading to formal qualification	12 weeks over 17 months.
7	Number of types of training materials produced for use by host country(s)	11 manuals, one for each module
Research Measures		
8	Number of weeks spent by UK project staff on project work in host country(s)	6
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	2 Technical report: Conservation strategy for PILA (mitigation of risks) submitted to SINAC & ANAM Technical report: Assessment of land-use changes in PILA using remote-sensed data for the years 1986, 2001 and 2011.
10	Number of formal documents produced to assist work related to species identification, classification and recording.	11 (Part of the course module training materials)
11a	Number of papers published or accepted for publication in peer reviewed journals	3 <i>Regional and Global Conservation assessments for 200 vascular plant species from Costa Rica and Panama.</i> <i>Salamanders from the eastern Cordillera de Talamanca, Costa Rica, with descriptions of five new species and natural history notes from recent expeditions.</i> <i>Dos nuevas especies de</i>

Code	Description	Totals (plus additional detail as required)
		<i>Surazomus Reddell & Cokendolpher, 1995 (Schizomida:Hhubbardiidae) deCosta Rica</i>
11b	Number of papers published or accepted for publication elsewhere	2 Borge, C. 2011. El Policultivo Indígena de Talamanca y la Conservación de la Naturaleza. Editorial INBio. 97p. Digital.
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	
13a	Number of species reference collections established and handed over to host country(s)	
13b	Number of species reference collections enhanced and handed over to host country(s)	
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	5 Two in the establishment of the post project network, three associated with the generation of project outputs.
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2 Frank González participated in the second Darwin Initiative Regional Workshop in Rio de Janeiro, Brazil; November, 2009, introducing the post-project. Alex Monro at RBG Kew 250 Year Celebration Conference, October 2010.
15a	Number of national press releases or publicity articles in host country(s)	
15b	Number of local press releases or publicity articles in host country(s)	3 a. file:///G:/Personal%20Data/My%20Documents/Bot%C3%A1nica/PILA-Darwin%20Data/1-%20Post-project/Divulgaci%C3%B3n%20en%20prensa/Prensa%20Latina%20Costa%20Rica.%20especies%20de%20plantas%20en%20peligro.php.htm b. file:///G:/Personal%20Data/My%20Documents/Bot%C3%A1nica/PILA-Darwin%20Data/1-%20Post-project/Divulgaci%C3%B3n%20en%20prensa/international-park-la-amistad-costa.html c. file:///G:/Personal%20Data/My%20Documents/Bot%C3%A1nica/PILA-Darwin%20Data/1-%20Post-project/Divulgaci%C3%B3n%20en%20prensa/international-park-la-amistad-costa.html

Code	Description	Totals (plus additional detail as required)
		a/PILA-Darwin%20Data/1-%20Post-project/Divulgaci%C3%B3n%20en%20prensa/27-especies-de-plantas-silvestres-estan-en-peligro-de-extincion.aspx.htm
15c	Number of national press releases or publicity articles in UK	
15d	Number of local press releases or publicity articles in UK	
16a	Number of issues of newsletters produced in the host country(s)	4 http://www.inbio.ac.cr/pila-darwin/paginas/resultados/boletines.html#post
16b	Estimated circulation of each newsletter in the host country(s)	50
16c	Estimated circulation of each newsletter in the UK	20
17a	Number of dissemination networks established	1
17b	Number of dissemination networks enhanced or extended	3
18a	Number of national TV programmes/features in host country(s)	1 Interview, 11 Channel, June 21 st , 2011
18b	Number of national TV programme/features in the UK	
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in host country(s)	1 June, 15 th , 2011 http://www.radiosucr.com/radio870/detalle_programa.php?id=4
19b	Number of national radio interviews/features in the UK	
19c	Number of local radio interviews/features in host country (s)	
19d	Number of local radio interviews/features in the UK	
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	11.000
21	Number of permanent educational/training/research facilities or organisation established	1 Asociación de Guías de Turismo de Talamanca (en proceso legal de creación)
22	Number of permanent field plots established	
23	Value of additional resources raised for project	
Other Measures used by the project and not currently including in DI standard measures		

Annex 5 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Digital y CD	Borge, C. El Policultivo Indígena de Talamanca y la Conservación de la Naturaleza. Editorial INBio. 97p. Digital.	Editorial INBio, Costa Rica	http://www.inbio.ac.cr/pila-darwin/paginas/biodiversidad/plantas.html	US\$4000
Journal	Rodríguez, A. Monro, A. K. Chacón, O. Solano D. Santamaría, D. Zamora, N. & González F. 2011. <i>Regional and Global Conservation assessments for 200 vascular plant species from Costa Rica and Panama.</i>	Phytotaxa 21: 1-216	http://www.inbio.ac.cr/pila-darwin/pdf/regional-global-conservation-assessments-for-200-vascular-plant-sp-from-C.R.-and-Pan.pdf	
Journal	Boza-Oviedo, E et al. <i>Salamanders from the eastern Cordillera de Talamanca, Costa Rica, with descriptions of five new species and natural history notes from recent expeditions.</i>	Zootaxa (Accepted)		
Journal	De Armas, L & Víquez, C. 2011. <i>Dos nuevas especies de Surazomus Reddell & Cokendolpher, 1995 (Schizomida:Hhubbardiidae) de Costa Rica</i>	Boletín de la Sociedad Entomológica Aragonesa (S.E.A.), nº 48 (30/06/2011): 77_86.		
Technical report	Informe técnico: Determinación del cambio de la cobertura de la tierra del Parque Internacional La Amistad, a partir de sensores remotos, en los años 1986, 2001 y 2011	Technical report to the Binational Commission, SINAC, ANAM		
Technical report	Evaluación de amenazas	Technical report to the		

	antrópicas en la en el Parque Internacional La Amistad PILA y su zona de amortiguamiento	Binational Commission,		
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Annex 6 Darwin Contacts

Ref No	Darwin 15-027
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