

Darwin Initiative – Final Report

Darwin project information

Project Reference	15/029
Project Title	Certifying Peccary Pelts in Peru: Catalysing Community-based Wildlife Management
Host country(ies)	Peru United Kingdom
UK Contract Holder Institution	University of Kent
UK Partner Institution(s)	Durrell Institute of Conservation and Ecology (DICE)
Host Country Partner Institution(s)	Instituto Nacional de Recursos Naturales (INRENA), CITES-Peru, Wildlife Conservation Society – Peru (WCS), WWF-Peru, Universidad Nacional de la Amazonia Peruana (UNAP), Universidad Particular de Iquitos (UPI) FundAmazonia
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Project Website	http://www.kent.ac.uk/anthropology/dice/research/peccary
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1 Project Background

Bush meat hunting can provide long-term socio-economic benefits to local communities and help conserve Amazonian biodiversity through maintaining intact rainforests. A pilot programme for peccary pelt certification was set up as a mechanism to manage bush meat hunting sustainably. Prior to this programme there was no mechanism to manage subsistence hunting. Peccary pelt certification is now a functioning mechanism to manage subsistence hunting. Six local communities are certified and are managing their bush meat hunting sustainably in accordance with wildlife management guidelines (Map 1). Through the Darwin Initiative local people are obtaining economic incentives that improve their livelihoods, conserve wildlife populations and maintain intact Amazonian forests. The Regional and National Peruvian Government sees this programme as an important mechanism to help conserve the Amazon and is committed to its continued implementation.

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

The project is helping support the Convention of Biological Diversity through the following articles:

1. Article 6 (5%) General Measures for Conservation and Sustainable Use in developing a national plan for managing subsistence hunting which integrates conservation and sustainable use into the national biological diversity policies. The Peruvian Government through INRENA is including peccary pelt certification in the *Reglamento de la Ley Forestal y de Fauna Silvestre* as a model for managing subsistence hunting in Peru.

2. Article 8 (5%) In-situ Conservation in managing biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to assuring their conservation and sustainable use. Peccary pelt certification is motivating local communities to set aside non-hunted community protected areas, managing intact forests for wildlife species, and implementing sustainable hunting practices.

3. Article 10 (10%) Sustainable Use of Components of Biological Diversity to integrate conservation and sustainable use of biological resources into national decision-making, adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity, encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with sustainable use requirements, and encourage cooperation between government authorities and the private sector in developing methods for sustainable uses of biological diversity. Peccary pelt certification links local communities, the leather industry of the private sector and government authorities (CITES) as a means of implementing a sustainable use programme that supports the local indigenous cultures and helps conserve Amazonian biodiversity.

4. Article 11 (10%) Incentive Measures that adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity. Peccary pelt certification provides economic incentives to local communities that set up and implement sustainable use of wildlife and wildlife habitats using a self financing mechanism.

5. Article 12 (10%) Research and Training that establishes and maintains programmes for scientific and technical education and training for conservation and sustainable use of biological diversity and its components and provide support for specific needs of developing countries. The peccary pelt certification programme has provided training to local communities, conservation professionals and government personnel who are now implementing the programme. The project has provided research on sustainability of bushmeat hunting, guidelines for implementing sustainable use of wildlife and wildlife habitat, and socio-economic benefits.

6. Article 22 (10%) Relationship with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); with particular emphasis on economics, trade and incentives (15%), indicators (10%), and sustainable use and biodiversity (25%). Peccary pelt exports from Peru are regulated by CITES, and peccary pelt certification is being implemented in collaboration with CITES-Peru. The focal point in Peru of the Convention on Biological Diversity is INRENA's Department of Biodiversity Conservation, which is one of the project partner institutions.

3 Project Partnerships

INRENA (Recently changed to the Forestry and Wildlife Division of the Ministry of Agriculture)

The Instituto Nacional de Recursos Naturales (INRENA) Department of Biodiversity Conservation is the Peruvian government office responsible for implementing the CBD (CBD focal point in Peru) and CITES, and is responsible for managing the peccary pelt trade in Peru. Collaborations with INRENA, both at the national level in Lima and the regional level in Iquitos, were realised with the Darwin project and the other host country partners. INRENA has been, and continues to be, involved in many aspects of the Darwin funded peccary pelt certification programme since its inception and during this past three years, and is committed to the implementation of peccary pelt certification in Peru. Co-ordinations between INRENA and the Darwin Project were continual during this past three years. The major collaborations included 1) INRENA requesting DICE to determine the peccary pelt quotas for Loreto, Peru, 2) INRENA participating in the peccary pelt certifying committee, 3) INRENA actively participated in the development and publication of the Peccary Pelt Certification Manual/Book, and 4) INRENA is committed to the implementation of the programme and is including peccary pelt certification within the wildlife regulations of Peru.

In January 2009, the Peruvian Government split up INRENA into two sections. The protected areas were passed to the new Ministry of Environment and the natural resources sections, including wildlife use and CITES were passed to the Forestry and Fauna Division within the Ministry of Agriculture. While these changes have caused some confusion within the government departments, the project has continued to collaborate with the Division of Forestry and Fauna. Indeed, one of the members of the Peccary Pelt Certification Committee is now the director of Fauna and Biodiversity, which includes CITES and the Convention on Biodiversity.

CITES- Perú

The Peruvian Scientific Authority of the International Convention on the Trade in Endangered Species (CITES) is responsible for evaluating the authorised peccary pelt quotas and oversees levels of exportation. There were close collaborations between the Scientific Authority of CITES and the Darwin project. CITES was involved with the preparation of the book on Peccary Pelt Certification. The CITES authority in Iquitos and Lima have had close collaborations with the project and form part of the certifying committee.

Wildlife Conservation Society (WCS-Peru)

The Wildlife Conservation Society (WCS-Peru) is actively collaborating with DICE in implementing the Darwin project. WCS-Peru helped co-ordinate the peccary pelt certification workshops and field-based courses on the certification guidelines and methodologies with local communities in the Yavari and Tamshiyacu-Tahuayo community reserve. In addition, WCS actively participated in meetings between WCS, DICE and the Certification Committee held in Iquitos during the past years. WCS also participated closely with writing, publishing and presenting of the book on Peccary Pelt Certification.

World Wildlife Fund (WWF-Peru)

The World Wildlife Fund (WWF-Peru) collaborated with DICE in implementing peccary pelt certification workshops and field-based courses on the certification guidelines and methodologies with local communities in the Pastaza RAMSAR sites. A decrease in funding of the WWF Pastaza project has resulted in a reduction of activities at the Pastaza sites and additional funding is being sought to cover these activities.

The Universidad Nacional de la Amazonia Peruana (UNAP)

The Universidad Nacional de la Amazonia Peruana (UNAP) participated closely with DICE and the Darwin project. Undergraduate and postgraduate students from UNAP were involved with field courses and field training as part of the Darwin project during these past three years. Students participated with the wildlife censuses, community-based activities and data analysis. Staff from UNAP also participated in meetings during the process of forming the certifying body. UNAP sent students to participate in the April 2009 capacity building field-based course on Wildlife Management and CITES in the Pacaya-Samiria National Reserve. Two graduates from UNAP were selected for the MSc on International Wildlife Trade at DICE where they successfully completed their degrees.

Fundacion para la conservacion del Tropico Amazonico (FUNDAMAZONIA)

FundAmazonia is a locally based NGO in the Peruvian Amazon that was specifically created to help support conservation activities. FundAmazonia's mandate is to support local capacity building for conservation projects, help local communities set up community based wildlife management programmes, assist protected areas in wildlife conservation, and promote conservation oriented research activities. FundAmazonia is playing an important role in the Darwin Initiative project on peccary pelt certification by co-ordinating the activities with partners and stakeholders in Peru.

New links and partners formed during the project

Universidad Particular de Iquitos (UPI)

Undergraduates from the Department of Ecology and Conservation from the Universidad Particular de Iquitos (UPI) participated in field courses and field training activities. UPI has recently begun its academic division in ecology and conservation and is set to be an important institution for this field. UPI plans to continue its collaboration with the Darwin project over the coming year. In addition, UPI sent undergraduate students to the field course in April 2009 on Wildlife Management and CITES in the Pacaya -Samiria National Reserve.

Wildlife Management in Forestry Concessions

The project continues its collaboration with INRENA (now the Department of Forestry and Fauna) and WWF-Peru initiative on implementing wildlife management in forestry concessions. The Darwin project has provided the guidelines that will be used in the forestry concession project. Currently, the Department of Forestry and Fauna is working on a proposal to develop wildlife management in forest concessions and has requested the Darwin project for advice.

Reproduction and Health in Bush Meat Species

The certification project continues its collaboration with Dr. Pedro Mayor of the Autonomous University of Barcelona on researching the reproduction of peccaries in the Peruvian Amazon and the spread of wildlife diseases. Dr. Pedro Mayor is consolidating his project and joined the project in field visits and capacity building workshops to the participating communities in the Tahuayo Blanco and Yavari Mirim areas.

Certifying Turtle Harvesting in the Pacaya-Samiria National Reserve

The turtle harvesting programme in the Pacaya-Samiria National reserve is a community based project that provides economic incentives to local communities who help conserve the Amazon River turtles. The programme has had some significant success in involving local communities in turtle and aquatic habitat conservation. However, the project is vulnerable, since it does not have an independent body that oversees the harvest quotas, conservation significance and chain of custody. The turtle harvesting programme requires a form of certification to consolidate its actions. The Darwin Project has been asked to put together the guidelines for a turtle harvesting certification programme, following the lessons learnt from the peccary pelt certification project.

4 Project Achievements

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

The major impact of peccary pelt certification is its role as a catalyst for community-based wildlife management. Communities that manage their wildlife sustainably participate in the certification programme and in turn, secure added income from the sale the peccary pelts, and are recognised as responsible environmentally sensitive communities that are helping to save the Amazon rainforest. These incentives help communities convert unsustainable practices to more sustainable hunting. With an increasing number of communities becoming certified the project is enhancing the conservation of Amazon forests, providing added income for rural families and demonstrating the importance of the environmentally sensitive European consumer as a driver for sustainable development of the Amazon rainforests. Indeed, the

greatest legacy of this project is its contribution to the improved livelihoods of rural Amazonians and the conservation of Amazon forests.

The peccary pelt certification programme aims to manage bush meat hunting sustainably, both in terms of biodiversity and socio-economic benefits. Sustainable use of wildlife will provide long-term socio-economic benefits to local communities, by providing food and income. However, many local communities are unable to convert non-sustainable bush meat hunting to more sustainable bush meat hunting, because of the economic costs involved. The peccary pelt certification programme is providing added economic benefits to the certified communities who are converting non-sustainable hunting to more sustainable hunting, and is helping these communities conserve Amazon forests. Peccary pelt certification is based on a set of guidelines that are enhancing biodiversity conservation on three levels. Firstly, bushmeat species are being hunted more sustainably, maintaining species populations and averting local extinctions. Secondly, wildlife habitat is being conserved and in turn conserving the entire array of biodiversity. Thirdly, fully protected non-hunted areas have been incorporated into community-based wildlife management plans, which act as fully protected areas in agreement with local communities. The project is having a positive impact in the communities of the Tahuayo Blanco by increasing awareness for conserving biodiversity and sustainable use of wildlife resources through economic incentives obtained by the added value of certified peccary pelts. The certification guidelines have helped the communities to: 1) respect their hunting quotas, 2) become aware that some animals are more vulnerable to overhunting than others, 3) set aside fully protected areas and 4) become aware of habitat conservation, including reforestation and more sustainable use of palm fruits. The economic incentives generated by the certified peccary pelts have a positive impact on the livelihoods of the people and a positive impact on biodiversity.

4.2 Outcomes: achievement of the project purpose and outcomes

The purpose of this project was to catalyse community-based wildlife management in the Peruvian Amazon through the implementation of a pilot programme for peccary pelt certification.

The peccary pelt certification programme is based on a set of wildlife management guidelines that communities follow to attain certification. The guidelines for wildlife management were developed through biological and socio-economic research conducted over a 20 year period and include:

1. Limits should be established on hunting animals resilient to overhunting such as collared peccary, white-lipped peccary, brocket deer, agouti, and paca.
2. Reduce or stop hunting animals vulnerable to overhunting, such as primates, tapir, jaguar, manatee, and giant river otter.
3. Set up hunting registers to monitor hunting activity and abundance through CPUE. Registers should record the time spent hunting, numbers of each species hunted, the location where the animals were hunted, sex of the animal, and the date.
4. Work with project staff to evaluate the sustainability of hunting using the Unified Harvest Model and establish hunting limits.
5. Set source (non-hunted) and sink (hunted) areas. Source areas will buffer hunted areas against overhunting and will help long-term sustainability.
6. Conserve wildlife habitat.

These guidelines were implemented differently in each community depending on their socio-economic and cultural realities. The first step in the pilot programme was to approach a set of communities and determine their willingness to participate in the programme.

The project assisted 11 participant local communities to set up wildlife management according to the guidelines. Six of the communities were granted provisional certification by the certifying committee. Thus, the project achieved its purpose to establish community-based wildlife management in the rural communities via certification of peccary pelts.

The project had a long-term view that the pilot programme would turn into full certification. This process required a series of parallel actions, including the acceptance by key stakeholders (government, NGO's, local communities and the private sector leather industry), provision of technical assistance, formation of a certifying body, and refining the programme through lessons learnt during the pilot programme. The Darwin Project successfully implemented this process and set the stage for full certification. All the key stakeholders are in agreement with the programme, the Peccary Certification book provides technical assistance as do the professionals trained by the project, the certifying body has been formed and is actively reviewing and granting certification, and the programme has been refined by lessons learnt during the pilot stage.

The long term biodiversity goals of the project were to help conserve Amazonian forests with all its biodiversity through community based wildlife management. The project has set into motion this long term goal. Peccary pelt certification is giving local communities the economic incentives to implement community based wildlife management. In turn, community based wildlife management is helping communities use wildlife resources more sustainably, helping to maintain intact forests and helping communities set non-hunted community protected areas.

Two analyses were conducted to evaluate the impacts on biodiversity of community based wildlife management. At the sites where communities are implementing peccary pelt certification catch per unit effort (CPUE) was used to see how wildlife populations are responding to management actions. The response of wildlife populations takes several years and it is probably still too early to be confident in the results. The preliminary results from the Yavari site show increasing populations of key wildlife species, including collared peccary, red brocket deer, woolly monkey, and other primate species. The white-lipped peccary showed fluctuations which appear to be linked to wildlife disease rather than an impact from hunting.

The impact of implementing community based wildlife management was also evaluated by a project in the Samiria River basin. This is a much longer term analysis and results are clearer. Community based wildlife management was set up in the late 1990's and wildlife monitoring of key wildlife species has been conducted over 20 years covering the periods before and after implementation of community based wildlife management. We can assume that the Samiria River basin acts as an example of the changes in biodiversity before and after setting up community based wildlife management. The success of community based management in the Samiria River basin has seen recovering populations of key wildlife species, such as the large-bodied primates, the blue and gold macaws, the Amazonian river turtles, and the black caiman. However, the research clearly shows that species are often in Lotka-Volterra competitive interactions, and recovery of one species will actually impact populations of other species. For example, large-bodied primates appear in competition with each other, and outcompete smaller species. As the blue and gold macaw numbers increase, the chestnut fronted macaw is in decline. Likewise, the recovery of the black caiman is resulting in a decline of common caiman. The management policies need to take into account the results of being successful. It may lead to an increase in the species being conserved, and in turn lead to a change in the animal community structure and a decrease in competing species.

4.3 Outputs (and activities)

Outputs achieved according to the revised logical framework:

The pilot programme of peccary pelt certification is in place

This output was achieved during the project. The pilot programme of peccary pelt certification is in place and steps are being taken to implement full certification.

Six communities were certified in the pilot programme. The communities have set up sustainable wildlife management, certified peccary pelts are moving through the chain of custody and being sold to the European leather market. The certifying body was set up and is functioning, the government, including CITES, is fully participating in the programme, the local communities are receiving economic benefits from the sale of certified pelts, and NGO's are interested in expanding the programme to additional communities.

Community based wildlife management in the certified communities has resulted in the following actions. 1) Certified communities are reducing the hunting of animals vulnerable to hunting such as primates and tapirs, and have set limits on hunting of animals resilient to overhunting such as peccaries, paca and deer. 2) Certified communities are keeping hunting registries and have been trained in the CPUE methods to monitor the impact of management actions. 3) Local biologists have been trained in the use of sustainability models such as Unified Harvest Model to evaluate harvest quotas for communities and certified communities have set hunting quotas that concur with the models. 4) Certified communities have set sink (hunted) and source (non-hunted) areas by communal agreement. 7) Certified communities are reforesting their habitats planting palm trees of *Mauritia flexuosa* and are using sustainable techniques to collect forest products.

The Peruvian government at both national and regional levels has incorporated the peccary pelt certification programme as a strategy to manage bushmeat hunting by rural people, provide economic benefits to environmentally responsible communities, improve livelihoods, and help conserve the Amazon forests. There is a solid commitment by the government to this programme as it fits with their goals of sustainable development.

Middlemen and tanneries participating in the pilot programme

This output was achieved during the project.

The private sector leather industry in Peru is committed to the programme and fully supports peccary pelt certification. The increasing demand from the European leather industry for certified pelts has fuelled the interests of the private sector. Indeed, during the past year's economic recession peccary pelts were the only product from the Peruvian leather industry that did not see a reduction in export demand or price. All other products were hit heavy by the recession.

The middlemen and tanneries are participating with peccary pelt certification. Several high end leather manufactures in Europe have requested certified peccary pelts which are now available on a small scale. The project met regularly with the middlemen in Iquitos and the tanneries, held workshops and coordinated the labelling and movement of certified pelts, and systems of verification through the chain of custody.

Certifying body evaluating communities requesting certification

This output was achieved during the project.

The Certification Committee was established in December 2007 and reviewed guidelines for certifying local communities, procedures for granting certification, and reviewed applications from 6 communities over the past two years. The committee decided to grant "provisional certification" to the communities. This was an important outcome, since it required the culmination of parallel processes, including 1) local communities implementing wildlife management plans, 2) evaluation and documentation of implementation, 3) local communities applying for certification, 4) the certifying committee agreeing on the procedures for granting certification, and 5) the certifying committee granting provisional certification.

Provisional certification allowed the project to go into full pilot mode. For the first time, certified peccary pelts moved through the chain of custody. The project set up mechanisms for labelling certified pelts, verifying the origin of certified pelts, transporting certified pelts to national tanneries, processing certified pelts in tanneries and sale of certified pelts or finished products to the European pelt industry.

The certifying committee is an active body with wide representation of key stakeholders including INRENA, the scientific authority of CITES-Peru, The University of San Marcos, The National University of the Peruvian Amazon, the Regional Government of Loreto, the Wildlife Conservation Society's Peru programme, and FundAmazonia.

Information on peccary pelt certification available to communities and professionals

This output was achieved during the project.

A set of publications was produced during the project, which includes booklets, manuals, a poster and a book. This information was published in Spanish and available to local communities. Summaries in English are attached to this report.

The project set up a process to present information to local communities, including procedures for developing and presenting workshops, conducting formal and informal meetings, assisting communities with documentation, and evaluations to verify management actions. The workshops and meetings are accompanied by booklets and manuals.

Local professionals and communities have access to the more complete book that was published in collaboration with partners of the project. The book contains more complete information on the background to certification, the biology of peccaries, socio-economics of subsistence hunting, models used to evaluate sustainability, implementing wildlife habitat and source-sink management, and setting up community-based wildlife management through peccary pelt certification. The book was distributed during workshops and field based courses. In addition the book was distributed to the governmental and NGO institutions. In the project produced many leaflets and a poster which were distributed to the communities and professionals. An English summary of the book is attached to this report.

Local communities implementing community-based wildlife management

This output was achieved during the project.

The peccary pelt certification programme is working as a catalyst for community-based wildlife management. There are currently 6 communities that have been certified and these communities have implemented the wildlife management guidelines and are selling certified peccary pelts. Two communities only requested certification after seeing the benefits that other communities obtain by being certified. The community of Diamante-7 de Julio only applied for certification after they saw the benefits that Chino and San Pedro obtained. Diamante-7 de Julio have been implementing the wildlife management guidelines since the inception of the project, and have now been granted provisional certification. The community of Jeruselen has begun to implement the wildlife management guidelines after seeing the benefits that other communities of the Tahuayo were obtaining by being certified.

Local communities gained added economic value of peccary pelts through certification. Communities understand the economic value they can attain through certification as a result of the workshops and field-courses. Communities have begun gaining added economic value after they were granted a Provisional Certificate by the Certification Committee and after a consensus was reached in the community. The added value is working as an incentive that helps the communities overcome the short term costs of converting unsustainable use to more sustainable use.

Local professionals have capacity to implement the peccary pelt certification programme

This output was achieved during the project.

Capacity building of local professionals will be key for full peccary pelt certification, and will require trained professionals at governmental, NGO and university institutions. The project implemented a series of capacity building measures to insure adequate training and set the stage for full certification. These included 1) field based courses that provided a taught

component and field practice specifically on implementing community-based wildlife management, 2) field based courses developed around wildlife research and wildlife monitoring, and 3) training of two MSc students at DICE.

The field based courses on implementing community based wildlife management included taught sections on socio-economics of bushmeat hunting, evaluating sustainability, wildlife habitat management, communities and protected areas, economic incentives for wildlife management and implementing the peccary pelt certification programme. Field based activities included visits to local communities, evaluating wildlife populations, determining ecological requirements for wildlife habitat management and community participation in protected areas. These courses were run over two week periods. Over the three years these courses included 60 students over 6 weeks of training.

The field based courses on wildlife research and wildlife monitoring focused more on wildlife censuses, DISTANCE analysis and research based projects. These field courses covered both the aquatic and terrestrial systems. These courses were of longer duration, and students often remained in the field for several months. Over the three years these courses had 30 students over 12 months of training.

The capacity building of local professionals for MSc training at DICE were completed according to the implementation timetable and output schedule. Two Peruvian MSc students trained in the MSc programme on International Wildlife Trade at the Durrell Institute of Conservation and Ecology, University of Kent, UK in 2007 and 2008. The two students completed their MSc and contributed with the implementation of the peccary pelt certification programme.

Summary

Workshops (7): 12 workshops were carried out

Field based courses (3): 6 field-based courses were carried out

Manuals (1): 5 manuals were produced

Book (1): 1 book was published

MSc level training (2): 2 MSc students graduated from DICE

Publications in International Journals (3): 1 published as a book chapter, and two in preparation to be published by the end of the post project.

4.4 Project standard measures and publications

During the project a total of 60 technical documents were produced, including publications, manuals, MSc theses, booklets, field reports, and other reports. Attached to this report are English summaries of all of the technical documents produced in Spanish.

4.5 Technical and Scientific achievements and co-operation

Biological Research

Peruvian staff were involved with biological research on the animal populations in the Samiria and the Yavari River basins. This research also involved Peruvian students and professionals from governmental and NGO institutions, and participants from local communities.

Methodologies

Line censuses along transect trails were used to conduct terrestrial mammal and game bird censuses. Censuses trails between 2-5 km in length were surveyed repeatedly. Information registered on a census includes: day, site, species, number of individuals, and perpendicular distance from the individual to the transect line, habitat, time, distance travelled and weather conditions.

The method assumes that all the animals that are on the center of the line transect (0 m perpendicular distance) will be observed. The technique is based on the notion that observers do not see all the animals that are off the center of the line, and that the probability of sighting an animal depends on the distance of the animal from the line. Animals closer to the line have a higher probability of being seen than animals further from the line. The perpendicular distance of all solitary animals sighted, or the first animal sighted in a social species were recorded. The DISTANCE estimation calculates the animals that you did not see, and includes these animals in the density estimate.

The method relies on measuring the perpendicular distance of animals before they move as a consequence of seeing the observer. That means observers must try and see the animal before they sight the observer. It also means observers must measure the perpendicular distance of the first sighting. If animals move because of the observer than the estimate will be biased. With the DISTANCE programme trails do not have to be straight, but the perpendicular distances must be measured at the correct angle of the center line. The perpendicular distance will be measured directly from the point of first sighting.

The method assumes that animals are independently dispersed throughout the habitat. Since individual animals within a social group are not independent, but move dependant upon one another, animal groups in social species must be considered as the sampling unit. Thus, DISTANCE will calculate the density of animal groups.

The equipment used for line transects included: a map of the area, a compass, data sheets, pens and binoculars. Trails were not placed with any pre-determined knowledge of the distribution of the animals. Censuses were done using small groups of three or four observers. Transects were walked slowly and quietly (500-1,000 m/hr) between 7am and 3pm.

Census information were analyzed using DISTANCE software. This programme is regularly used in calculating individual or group densities and can estimate densities if the distribution of sightings within a transect line forms a clear probability function. When the number of sightings is deemed insufficient to determine a probability function, the method known as 'fixed width' was used to estimate the densities.

Summary of Findings Samiria

The terrestrial mammals of the Samiria River have shown healthy populations during the past three years. Overall, the heavily hunted zone has shown the greatest increase, measured as biomass (kg/km²), which was largely due to increased sightings of white-lipped peccary. The lightly hunted and moderately hunted zones have shown some variation, and overall have shown relatively constant mammalian biomass. The primates have generally maintained their population levels in the Samiria River. The densities in 2008 were slightly lower overall than 2007, except for the woolly monkey which showed an increase for 2008. The greatest decline was in the populations of saddled-back tamarin, *Saguinus fuscicollis*, which is a small-bodied primate not used by hunters. It is likely that competition from the larger primates is driving down the populations of the smaller tamarins.

The densities of the terrestrial mammals showed considerably greater variation than the arboreal primates. White-lipped peccary (*Tayassu pecari*), lowland tapir (*Tapirus terrestris*), and coati (*Nasua nasua*) showed the greatest increases during the three year period. In contrast, red brocket deer (*Mazama Americana*), collared peccary (*Tayassu tajacu*) and sloth (*Bradypus variegates*) showed the largest decreases. The agouti (*Dasyprocta fuliginosa*) and tamandua (*Tamandua tetradactyla*) showed relatively stable populations.

Competition appears to be a major factor determining the primate communities along the Samiria river basin. Whilst squirrel monkeys are the most abundant species in all three sections of the Samiria basin, biomass reflects ecological dominance. Howler monkeys and capuchin monkeys have similar biomasses in the mouth region, whereas howler monkeys dominate the mid-section and woolly monkeys (*Lagothrix lagotricha*) dominate up river (Fig. 2). Using censuses it is clear that the howler monkeys and woolly monkeys are in a Lokta-Volterra competitive interaction, with woolly monkeys winning up river and howler monkeys winning in the mid section ($r= 0.98, p<0.001$). The total K of both species appears to be around 30 ind/km². Other species also appear to have Lokta-Volterra interactions, but sample sizes do not currently show significant relationships.

These results have important implications for conservation strategies and management policies. The conservation actions of reducing hunting clearly are helping to increase the populations of large bodied

primates, but at the expense of small bodied species. Also, the dominance of one species will impact the population of other species. For example, if woolly monkeys or howler monkeys begin to dominate an area of the Samiria basin, this will decrease the population of the competing species.

The populations of terrestrial mammals in the Samiria basin is confounded by both hunting and habitat types. The area around the mouth of the Samiria is flooded more intensively than the forests in the mid section, and up river is flooded the least. There is also greater hunting of terrestrial mammals closer to the mouth and less hunting up river. The terrestrial mammals show a clear relationship with distance from the mouth, and species have greater densities and biomasses further up river. For example, terrestrial mammals had a total density of 2.4 ind/km² at the mouth, 4.2 ind/km² at the mid section and 10.2 ind/km² up river and their populations in an 100km² area are greater in the up river sections of the basin ($X^2=595$, $p<0.001$). Similar to previous surveys very few ungulates occur in the mouth region and have increasing populations further up the basin. The peccary biomass dominates the up river sections of the Samiria river.

In contrast, the aboreal Amazon squirrels (*Sciurus* spp.) have a greater density at the mouth (8.5 ind/km²), compared to the mid and upper sections (2.2 and 2.5 ind/km² respectively). Likewise, the arboreal sloth (*Bradypus variegatus*) has greater densities at the mouth (1.1 ind/km²) compared to the mid section (0.5 ind/km²). This species was not observed up river. These results suggest that the extensive flooding around the mouth of the Samiria river basin is limiting the populations of terrestrial mammals. During high water periods terrestrial mammals retreat to levees or floodplain islands to wait out the floods. Levees are more common up river and in turn these areas support greater populations of terrestrial mammals.

Yavari

The survey was focused on collared peccary (*Tayassu tajacu*), white-lipped peccary (*Tayassu pecari*), red brocket deer (*Mazama americana*), lowland tapir (*Tapirus terrestris*), and woolly monkey (*Lagothrix poeppigii*). The collared peccary have been increasing in the Yavari Miri region over the past ten years, and their populations are maintaining at around 9 ind/km². The white-lipped peccary population decreased substantially in 2002 prior to the influx of timbermen. This decrease is presumed to be caused by the species exceeding its carrying capacity when the density exceeded 16 ind/km². The current level of white-lipped peccary continues at a relatively low level, with a slight but non-significant increase. The current population is around 5 ind/km². The population of red brocket deer has always been relatively low in the Yavari Miri region and is currently at its mean population of around 1 ind/km², which is similar to other regions of the Peruvian Amazon. The population density of lowland tapir is being impacted by overhunting and its population has been decreasing over the past 12 years. The lowland tapir is known to be particularly susceptible to overhunting, and its density in the Yavari Miri region is at a low of 0.1 ind/km², which is similar to other hunted localities in the Peruvian Amazon, such as the Pacaya-Samiria National Reserve. The population density of woolly monkey is actually doing very well in the Yavari Miri region, despite the species being vulnerable to overhunting. Indeed, the woolly monkey is at an all time high for the area with over 30 ind/km², which is one of the highest reported densities in the Amazon.

The results were peer reviewed in reports by the Wildlife Conservation Society and Earthwatch Institute reviewers.

Social Research

Peruvian staff were involved with biological research on the willingness and understanding of local communities to participate in wildlife management and peccary pelt certification. This research also involved Peruvian students and professionals from governmental and NGO institutions, and participants from local communities.

Methodologies

Data on people's attitude to the wildlife management guidelines, on their knowledge of how to implement the guidelines, and on their knowledge of current wildlife agreements were collected by using a questionnaire survey, focus group discussions and interactive dialogues. As an independent measure of how well the guidelines were being implemented in relation to the community attitude was collected from the community hunting register. The hunting register also supplied information for the calculation of Catch per Unit Effort data to provide an index of the population responses of hunted species to hunting. As an independent measure of the impact of hunting on species populations, density data were also analyzed.

Summary of findings

All respondents acknowledged that their community had established wildlife agreements, but not all respondents were able to actually name aspects of the guidelines. Although, the respondents were not able to name specific aspects of the certification guidelines such as species that are either vulnerable to or less vulnerable to over-hunting, establishing of the hunting register either hunting quota, establishing source and sink areas and also management of habitat conservation, they were able to name some aspects of the wildlife agreements connected with the guidelines, such as whether or not the village had a hunting quota, had wildlife vigilance patrols etc.

Three factors, age, gender and level of education were found to explain respondent knowledge of the wildlife agreements. In group discussions communities indicated that they understood non-vulnerable species to be those with high annual reproductive rates and large population size. Communities recognized that species with low annual reproductive rate and low population size were identified as vulnerable to overhunting and identified eight species as vulnerable to overhunting: jaguar (*Panthera onca*), giant armadillo (*Priodontes maximus*), tapir (*Tapirus terrestris*), red uakari monkey (*Cacajao calvus*), spider monkey (*Ateles paniscus*), howler monkey (*Alouatta seniculus*) and both deer, red brocket deer (*Mazama americana*) and gray deer (*M. goauzoubira*). The solitary behaviour of the both deer raised uncertainty in the communities about the vulnerability of these species to overhunting as was mentioned in the group discussions. In addition they mentioned that species such as the giant river otter, capuchin monkey and woolly monkey had increased in population size in recent years when they were not hunted.

In the five communities, the majority of respondents were agreed about including a list of species that are either vulnerable to or less vulnerable to over-harvest as a part of wildlife agreement. Overall, the proportion of respondents who were knowledgeable about hunting registers, ranged from around 60% to 100% of respondents, but differed across the five communities ($\chi^2=20.850$, $df=4$, $P<0.001$).

The majority of respondents in each community (ranging from 75% to 100%) agreed with including the hunting register as a part of the wildlife agreement. Similarly, the communities also were positive about including quotas for hunted species in the agreement. The communities were generally in agreement about designating hunting and non-hunting areas (source-sink areas) as a part of the wildlife agreements. Overall, 80% of the respondents agreed that habitat conservation should be part of the wildlife agreement. In addition when was asked about some measures to conserve the palm trees, the respondents mentioned palm reforestation; a ban on felling trees and use of a climbing device to allow the harvesting of fruits and leaves without harming the tree.

During the discussion groups, the five communities made several suggestions to improve implementation of the wildlife management guidelines, including requests for more information. Each community had different suggestions, for instance Diamante 7 de Julio requested information concerning the process of the program; whereas Buena Vista and Nueva Esperanza – Carolina requested information about future earnings.

The majority of respondents in each community mentioned that the wildlife would increase as a result of wildlife management. In addition, respondents were asked whether they had an economic interest in supporting wildlife management and respondents with primary school education tended to be more interested to support wildlife management if economic incentives are provided from the program.

Although there were some gaps in knowledge of the wildlife management program most respondents had a positive attitude about the implementation of the guidelines in their wildlife agreements established in the communities. A comparison of the main results from the different communities shows clearly where more work may be required to improve knowledge and manage expectations.

The catch per unit effort and density results for the different species and communities show that the density of all species has remained stable since the wildlife management were initiated, with some species showing increasing abundances in different areas.

The findings on the social research were reviewed by internal and external reviewers in the Department of Anthropology, University of Kent, UK

The project and the communities had an agreement on technical co-operation signed in their community book or "Libro de Actas Comunal": In this agreement the communities of agreed with implementing the wildlife management guidelines. The project agreed to provide technical and scientific information to the communities to help them implement wildlife management.

4.6 Capacity building

The Darwin project realises that capacity building within Peru will be important for the conservation of biodiversity in the host country. Local community participants, Peruvian students and professionals were trained in community-based wildlife management and wildlife monitoring techniques during these past three years as part of the peccary certification programme.

Local people from participating communities obtained capacity building on community based wildlife management during the workshops, community based training courses, and formal and informal meetings.

Peruvian students and professionals from governmental and NGO institutions obtained capacity building during field based courses focused on community based wildlife management and wildlife research and monitoring.

A Peruvian MSc student, Pedro Perez, completed his MSc studies in September 2007 at Durrell Institute of Conservation and Ecology (DICE), University of Kent in International Wildlife Trade. Pedro's dissertation was on "Refining the guidelines of the peccary pelt certification programme". Pedro received a Distinction for his thesis and a Merit overall. During his time with the Darwin project Pedro Perez designed leaflets that helped to wildlife management in the participant communities using his expertise learned at DICE. Currently Pedro is working in the Peruvian Amazon on wildlife research and monitoring with IIAP (The Institute of Investigation of the Peruvian Amazon).

A Peruvian MSc student, Claudia Rios, completed her studies for the MSc programme in International Wildlife Trade at the Durrell Institute of Conservation and Ecology (DICE), University of Kent in September 2008. Claudia began her training at DICE in September 2007. Claudia conducted her dissertation on "Evaluating the peccary pelt certification programme in local communities of the Peruvian Amazon". Her research assisted the certifying programme by assessing the implementation of certification guidelines in participant communities, helped to determine stakeholder attitude toward implementing the guidelines, helped to determine the limitations and difficulties of setting up the guidelines in local communities, helped to determine the impact of certification on wildlife numbers and revise the certification guidelines in accordance with the realities of local communities. Currently Claudia Rios is assisting the Regional Government of Loreto in setting up wildlife management based around the peccary pelt certification programme.

4.7 Sustainability and Legacy

The peccary pelt certification programme is considered by INRENA and CITES as a strategy to manage the peccary pelt trade and the existing subsistence hunting policy. INRENA is incorporating peccary pelt certification into the new version of the National Wildlife Law (*Reglamento de la Ley Forestal y de Fauna Silvestre*). The work has been promoted at both the regional and national levels as a means of managing the subsistence hunting laws of Peru. The project has also been included in the Cross Cutting Program on Wildlife Management by WCS and the G & B Moore Foundation. At an international level, the project has been used as an example of economic incentives for managing bush meat hunting by CITES.

The peccary pelt certification programme is incorporating self funding mechanisms via the added value generated by certified pelts. The added value of peccary pelts is provided for by the tanneries, who in turn sell certified peccary products at higher prices. Additional funding will be required to help other communities obtain certification. This funding will be provided by governmental programmes and NGO support. For example, the Regional Government of Loreto is currently incorporating peccary pelt certification as a way to help communities through economic incentives of sustainable wildlife use. Large NGO's such as WCS are supporting the development and implementation of community management plans. The major importing

countries of Germany, France, Italy and Austria should also help support the programme, potentially via EU funding, but there has been no firm commitment to date. Many small NGO's from a diversity of backgrounds work with rural communities in the Peruvian Amazon. If these NGO's incorporate sustainable wildlife use and peccary pelt certification as one of their activities, then peccary pelt certification will expand widely throughout the Peruvian Amazon.

The project has huge potential for replication and extension. Indeed, the legacy of the project is to set up peccary pelt certification throughout the entire Peruvian Amazon. This project has set up the model that communities use to gain certification. With an increasing number of communities becoming certified the project will enhance the conservation of Amazon forests, provide added income for rural families and demonstrate the importance of the environmentally sensitive European consumer as a driver for sustainable development of the Amazon rainforests. Indeed, the greatest legacy of this project will be its contribution to the improved livelihoods of rural Amazonians and the conservation of Amazon forests.

5 Lessons learned, dissemination and communication

The lessons learned include the following:

Peccary pelt certification is a feasible way to manage bushmeat hunting in the Peruvian Amazon, provide added income to the livelihoods of rural people, help implement CITES regulations, help conserve intact Amazon forests, and use the European green market as a way to help local communities implement community based wildlife management.

Local communities are interested in participating with wildlife management plans as part of the peccary pelt certification programme, as a way to secure wildlife resources for the future and attain added value of their peccary pelts.

Wildlife management needs to be set up in timber concessions, not only in local communities.

Middlemen and tanneries are interested in the peccary pelt programme and are fully involved with the certified pelts and working closely with INRENA.

INRENA and CITES are very interested in the peccary pelt certification programme, because they see it as a way to implement better regulation in the peccary pelt trade, and as a way to manage the subsistence hunting laws.

The process of certification is long and sometimes the communities expect benefits in the short term.

Certification programmes can be set up with other resources to obtain biodiversity conservation and improved livelihoods.

The chain of custody requires further development once the number of certified pelts increases.

The number of communities interested in participating increases once they see the benefits of the programme.

The certification programme is complicated to explain clearly, but once understood all stakeholders and actors have been very positive and willing to participate.

Dissemination includes the following:

The peccary pelt certification project was disseminated during the 7th Latin American Wildlife Management Conference in Salvador de Bahia, Brazil in September, 2006.

The peccary pelt certification project was disseminated during the 8th Latin American Wildlife Management Conference in Acre, Brazil in September, 2008

A web page was developed on the project

<http://www.kent.ac.uk/anthropology/dice/research/peccary>

The project was included in the WCS Cross Cutting Program on Wildlife Management.

INRENA and CITES have been promoting the project.

The project was disseminated in the CITES COP meeting in The Hague (Holland) in 2007.

Dissemination in local communities during workshops and field courses.

Dissemination to Universities during university level field activities and field-based courses.

Dissemination will continue after the project ends by the Regional Government, INRENA, CITES, NGO's and other stakeholders involved with certification.

The project was disseminated in 2008 during the presentation of the book on peccary pelt certification.

A poster was published and distributed to local communities, NGO's, universities and government institutions.

A short presentation was given to HRH Princess Anne Princess Royal at the British Embassy in Lima on 7 July 2007.

The project was presented to the Director of CITES during a visit to DICE in February 2007.

5.1 Darwin Identity

Darwin identity was achieved during the project.

The Darwin Initiative was widely publicised using the Darwin logo during the field-based courses, workshops and meetings with local communities, students and professionals.

The Darwin logo was published on all of the booklets, leaflets, poster and the book. In addition the Darwin logo was placed on all of the technical and field reports.

The Darwin project has become well known for promoting peccary pelt certification and sustainable resource in the Peruvian Amazon.

The Darwin logo was always published in conjunction with the logo of partner institutions, which is important, since it clearly shows how the Darwin project is working with the national stakeholders and promotes the national identity of the programme.

In addition the Darwin Initiative logo was publicised in International Wildlife Management Conferences and during the CITES COP in 2007.

6 Monitoring and evaluation

The means of verification functioned well during the project, and included workshop reports, field reports, and technical reports, which are included on a separate CD.

English summaries are provided for all documents produced in Spanish.

There are 11 rural communities involved with the programme who are being monitored by project staff during regular visits, 6 have been certified.

The prices of pelts being bought and sold is being monitored through regular visits to the communities and middlemen.

Wildlife censuses have been conducted in the Yavari, Tahuayo Blanco and Samiria river systems to monitor the wildlife populations. Censuses will continue to be conducted in these river systems with funding from WCS and other organisations.

The outputs of workshops and field courses are being monitored through reports.

Wildlife management plans are being monitored through regular visits of project staff to the local communities. All 6 certified communities have elaborated wildlife management plans and incorporated the certification guidelines.

Meetings held with partners, stakeholders and during the certification committee are reported on in writing.

6.1 Actions taken in response to annual report reviews

The suggestions given by the annual reviews were acted upon in all cases. Below is a summary of the most relevant suggestions and the actions taken by the project.

S. Present project reports during the annual review.

A. All project reports were submitted during the 2nd and 3rd annual review.

S. In the Final Report present English summaries of all of the reports.

A. English summaries of all of the reports produced during the project have been included with the Final Report.

S. Develop a clear exist strategy for the project.

A. The self funded nature of the certification programme and its buy in by governmental, NGO's and local communities has resulted in a clear exist strategy for the project.

S. What is the level of community involvement in monitoring wildlife.

A. Communities are monitoring their impact on wildlife using catch per unit effort analysis.

S. Explain who is paying for the added economic benefits received by the communities while the market chain is being developed in Europe.

A. A private donor has agreed to help pay for the economic incentives as the market is being developed.

S. Explain how the European market will become involved with certified peccary pelts.

A. There is already interest by a number of European leather companies in certified peccary pelts. We feel they found out about the programme via the web page. It is important to secure supply before offering certified products to the industry, so we have first focused our attention on the community side. It appears that the market side is primed for this type of product and we will be following the results over the short and medium term.

7 Finance and administration

7.1 Project expenditure

	2006/2007	2007/2008	2008/2009	2009/2010	Actuales
Rents, rates, heating , cleaning, overheads					
• Darwin funding					
• Other funding					
Office costs eg postage, telephone, stationary					
• Darwin funding					
• Other funding					
Travel and subsistence					
• Darwin funding					
• Other					
7.1.1.1.1.1 Printing					
• Darwin funding					

• Other					
Conferences, seminars etc.					
• Darwin funding Workshops @ 4000 Fieldcourses @ 6000					
• Other funding Fieldcourses @ 6000					
Capital items/equipment (please break down)					
• Darwin funding					
• Other funding					
Other costs (including Audit costs to a maximum of £500) (Please specify and break down)					
• Darwin funding MSc Training Fees Stipend Travel Project Audit					
• Other funding					
Salaries (from previous table)					
• Darwin funding					
• Other funding					
TOTAL PROJECT COSTS					
TOTAL COSTS FUNDED FROM OTHER SOURCES					
TOTAL DARWIN COSTS					

7.2 Additional funds or in-kind contributions secured

FundAmazonia provided logistical support and funding: £XXXX

WCS Provided staff time and funding for community work: £XXXX

Value of DI funding

The funding provided by the Darwin Initiative was extremely valuable in setting up the pilot programme for peccary pelt certification. The direct funding provided the means to implementing the programme, having dedicated staff time, and providing funds for the community work, capacity building and logistics. The additional funds that were secured required the Darwin Funding and would probably not have been obtained without the Darwin support. The Darwin Initiative is well known pulls a lot of weight within NGO and government organisations, and the respect that the Darwin Initiative has definitely helped secure additional funding.

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 2007 - March 2008	Actions required/planned for next period
<p>Goal: 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</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 		(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity eg steps towards sustainable use or equitable sharing of costs or benefits)	(do not fill not applicable)
<p>Purpose “Catalyse community based-wildlife management in the Peruvian Amazon through the implementation of a pilot programme for peccary pelt certification” (insert original project purpose statement)</p>	<p>Local communities gaining certification through the pilot programme</p> <p>Local communities gaining added economic value of peccary pelts through certification</p> <p>Increases in populations of wildlife species in hunting grounds of certified communities</p>	<p>6 participant communities gained certification</p> <p>communities are getting added economic value from peccary pelts</p> <p>Wildlife populations increase as a result of community based wildlife management, as demonstrated in the Samiria River basin</p>	(Highlight key actions planned for next period)
<p>Output 1. Pilot programme of peccary pelt certification in place</p>	<p>Minimum of 6 communities participating in the pilot programme</p> <p>Middlemen and tanneries participating in the pilot programme</p> <p>Certifying body evaluating communities requesting certification</p> <p>Information on peccary pelt certification available to communities and professionals</p>	<p>Currently there are 11 communities participating in the pilot programme and 6 certified communities.</p> <p>Middlemen and one tannery in Arequipa are involved with the programme.</p> <p>The Certification Committee is a fully functioning body that grants certification and verifies the programme</p> <p>The book on peccary certification has been published</p> <p>Leaflets on the peccary pelt certification have been distributed</p>	
<p>Activity 1.1 12 workshops were held</p> <p>6 field based courses were held</p>		<p>There were more workshops and field based courses held than originally planned.</p>	
<p>Activity 1.2. 6 meetings with the middlemen, 1 meeting with the tannery in Arequipa and 2 in Iquitos.</p>		<p>This activity was completed</p>	

Activity 1.3 5 meetings with the Certifying body.		This activity was completed
Activity 1.4 The book on peccary certification is published		The book was published
Output 2. Local communities implementing community-based wildlife management	Minimum of 6 communities implementing wildlife management	11 communities are implementing wildlife management, 6 have beencertified
Activity 2.1. 8 workshops held in the Tahuayo Blanco		Workshops were completed
Activity 2.2. 4 workshops held at the Yavari Mirim		Workshops were completed
Output 3. Local professionals have capacity to implement the peccary pelt certification programme	Two Peruvian MSc students trained in management of wildlife trade in the UK Undergraduate and MSc students trained in community-based wildlife management in Peru	
Activity 3.1. MSc level training		2 MSc's were completed
Activity 3.2. One week field course held		Courses included 60 students over 6 weeks of training.
Activity 3.3 Wildlife Monitoring field expeditions		Monitoring expeditions included 30 students over 12 months of training.

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

Revised Logical Framework 15-029

Project summary	Measurable Indicators	Means of Verification	Important Assumptions
<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 poor in resources to achieve</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>			

<p>Purpose “Catalyse community based-wildlife management in the Peruvian Amazon through the implementation of a pilot programme for peccary pelt certification”</p>	<p>Local communities gaining certification through the pilot programme</p> <p>Local communities gaining added economic value of peccary pelts through certification Increases in populations of wildlife species in hunting grounds of certified communities</p>	<p>Monitoring the number of rural communities requesting and obtaining certification Monitoring of peccary pelt prices bought and sold in rural communities Conducting census of wildlife populations</p>	<p>Rural communities have discount rates that permit sustainable use of wildlife resources Environmentally aware consumers in European countries maintain demand Wildlife species increase when bushmeat hunting is managed</p>
<p>Outputs</p>			
<p>Pilot programme of peccary pelt certification in place</p>	<p>Minimum of 6 communities participating in the pilot programme Middlemen and tanneries participating in the pilot programme Certifying body evaluating communities requesting certification Information on peccary pelt certification available to communities and professionals</p>	<p>Community workshop reports Reports on workshops held with middlemen and tanneries Reports of the certifying body <i>Information published and available on peccary pelt certification</i></p>	<p>Continued market for the peccary pelts Continued market for bush meat Stakeholder involvement</p>
<p>Local communities implementing community-based wildlife management</p>	<p>Minimum of 6 communities implementing wildlife management</p>	<p>Community-based wildlife management plans Evaluations of community-based wildlife management plans</p>	<p>Bush meat hunting by local communities is legal in Peru Communities are interested in the bush meat resources and their management</p>
<p>Local professionals have capacity to implement the peccary pelt certification programme</p>	<p>Two Peruvian MSc students trained in management of wildlife trade in the UK Undergraduate and MSc students trained in community-based wildlife management in Peru</p>	<p>MSc degrees awarded to two Peruvian students Undergraduate and MSc field courses provided in Peru</p>	<p>Appropriate MSc training course available in the UK Appropriate Peruvian University programmes available</p>
<p>Activities</p>	<p>Activity Milestones</p>		<p>Assumptions</p>

Workshops (7)	<p>Yr.1 selection of participating communities using an in-country workshop with local biologists and community representatives working with community-based wildlife management; Yr1 workshop involving middlemen and tanneries from the private sector for training on certification.</p> <p>Yr 2 workshop with biologists and community representatives working with participating communities to evaluate progress of the pilot programme; workshop with certifying body selected by INRENA to train on management procedures.</p> <p>Yr 3 workshop with biologists and community representatives working with participating communities to develop lessons learnt; workshop with middlemen and tanneries from the private sector to determine the effectiveness of implementation including the chain of custody and added value income for communities; workshop with the certifying body to assist with certifying local communities.</p>	<p>Local communities agree to participate in the project</p> <p>Middlemen and tanneries agree to participate in the workshop</p> <p>Local communities participate in the project</p> <p>Certifying body selected by INRENA</p> <p>Local communities implement wildlife management as part of certification</p> <p>Middlemen and tanneries implement certification</p> <p>Local communities are ready to be certified</p>
Field-based courses (3)	<p>Yr 1 field-based course on wildlife management and monitoring for rural community members involved with certification</p> <p>Yr 2 field-based course on DISTANCE and CPUE analysis</p> <p>Yr 3 field-based course on Wildlife management and CITES and the peccary pelt certification programme</p>	<p>Local community members willing to participate</p> <p>Participants available</p> <p>Participants available</p>
Manual development (1)	<p>Collation of information on peccary biology, sustainable harvesting, community-based conservation, socio-economics of the bush meat trade, and the process and implementation of the peccary pelt certification programme in Spanish. Final draft manual by March 08, publication by July 08.</p>	<p>Information available</p>
MSc level training (1)	<p>Select most appropriate student for MSc training to begin in Sept. 07 by July 07.</p>	<p>Student available</p>
Publications in International Journals (3)	<p>Submit publications to International Journals on: Conservation Implications of Certification Economic Considerations of Certification Trade, Bushmeat and Certification</p>	<p>Information available</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	5%	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	5%	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	10%	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	10%	Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training	10%	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		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.

Article No./Title	Project %	Article Description
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.
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		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	2
3	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	75
4b	Number of training weeks provided to undergraduate students	62
4c	Number of postgraduate students receiving training (not 1-3 above)	15
4d	Number of training weeks for postgraduate students	62
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(ie not categories 1-4 above)	11 local communities of approximately 600 people
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	4 additional communities where initial stages of certification are beginning
6b	Number of training weeks not leading to formal qualification	30
7	Number of types of training materials produced for use by host country(s)	18
Research Measures		
8	Number of weeks spent by UK project staff on project work in host country(s)	75
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	6 community based management plans certified
10	Number of formal documents produced to assist work related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals	1 chapter in peer reviewed book
11b	Number of papers published or accepted for publication elsewhere	
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	

Code	Description	Totals (plus additional detail as required)
	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	12
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2
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)	
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)	
16b	Estimated circulation of each newsletter in the host country(s)	
16c	Estimated circulation of each newsletter in the UK	
17a	Number of dissemination networks established	
17b	Number of dissemination networks enhanced or extended	
18a	Number of national TV programmes/features in host country(s)	
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)	
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	

Code	Description	Totals (plus additional detail as required)
	UK	
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	
21	Number of permanent educational/training/research facilities or organisation established	
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 *	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Peccary pelt certification manual/book*	Certificación de pieles de pecaríes (<i>Tayassu tajacu</i> y <i>t. pecarí</i>) en la Amazonía peruana: Una estrategia para la conservación y manejo de fauna Silvestre en la Amazonia peruana. Tula Fang, Richard Bodmer, Pablo Puertas, Pedro Mayor, Pedro Perez, Rosario Acero and David Hayman. 2008	Wust Editions, Lima, Peru	FundAmazonia and DICE website	Free
Monograph	Landscape Conservation in the Amazon Region: Progress and Lessons. Painter, M., A.R. Alvez, C. Bertsch, R. Bodmer, O. Castillo, A. Chicchon, F. Daza, F. Marques, A. Noss, L. Painter, C. Pereira de Deus, P. Puertas, H.L. de Queiroz, E. Suarez, M. Varese, E.M. Venticinque, R. Wallace. 2008	WCS Working Paper No. 34. Bozeman	WCS.org	Free
Book Chapter	Co-managing Wildlife in the Amazon and the Salvation of the Pacaya Samiria National Reserve in Peru.. Richard Bodmer, Tula Fang and Pablo Puertas. 2009	Island Press, Washington DC	Amazon.com	
Wildlife Management Leaflet	Un buen Uso de la Caza. Promoviendo el buen uso de la caza para un buen futuro de las comunidades. Tula Fang y Richard Bodmer. 2009	Ceta editors. Iquitos, Peru		Free
Wildlife management leaflet	La certificación de los cueros de sajino y huangana. Manual técnico. Promoviendo el buen	Ceta editors, Iquitos, Peru		Free

	uso de las pieles para el buen uso de los animales de caza. Por Tula Fang y Richard Bodmer.2009.			
Wildlife management leaflet	Un buen uso de la fauna silvestre en concesiones forestales.Promoviendo el buen uso de la fauna para el buen uso de la caza en concesiones forestales Por Tula Fang, Richard Bodmer y Pedro Mayor. 2009.	Ceta editors, Iquitos, Peru		Free
Poster	La certificacion de pieles de pecaries (sajino y huangana) en la Amazonia peruana. 2008			Free

Annex 6 Darwin Contacts

Ref No	15/029
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