## 1. Darwin Project Information

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| *Project Ref. Number* | 162/12/016 |
| *Project Title* | Indigenous Methods to Sustainably Manage Riverine Plantations, Amazon Region |
| *Country(ies)* | Colombia |
| *UK Contractor* | University of Strathclyde |
| *Partner Organisation(s)* | Blanca de Corredor, Universidad Nacional, AICSE[1] |
| *Darwin Grant Value* | £179,100 |
| *Start/End dates* | September 2003/August 2006 |
| *Reporting period* | 1 Apr 2003 to Mar 2004, Annual Report No. 1 |
| *Project website* | |
| *Author(s), date* | Blanca de Corredor, Ann M. Mitchell, Alexander I. Gray, |

## 2. Project Background

The region of Amazonia (along with Orinoquia) comprises more than half of the country of Colombia and both of these river systems feed into the larger Amazon floodplain and its wealth of biodiversity. These flooded forest regions are the birthplace for many species that distribute themselves in the greater Amazon delta. The Colombian Government has been concerned for many years about the management of this area and in 1979 commissioned the project 'Proyecto Radagrametrico del Amazonas'. This project (La Amazonia colombiana y sus Recursos, 1979) evaluated the resources of the Colombian Amazonia and its appropriate management but very obviously from a 'western' point of view. It did not take cognisance of indigenous methods of land management and policy (e.g. Arts. 8, 10 & 11, CBD).

Our project seeks to open up a dialogue (Arts. 17 & 18, CBD) between local indigenous communities and the institutions with a more western stance involved in agriculture/ biodiversity conservation to look at methods for preservation of habitats, particularly those of river banks that form platforms for reproduction of fauna in general (mammals, birds, river animals – reptiles, fish, amphibians) and ultimately for sustainable human agriculture.

The need for solutions to problems of inappropriate management of the rainforest has been identified by members of the communities near Leticia, Amazonas, who have participated in a previous Darwin-funded project (No. 162/9/008). The present project will study sustainable methods of farming and maintenance of riparine forest areas used by indigenous and other communities seeking to determine the methods that allow preservation of the area while providing sustenance for communities without degrading and sterilising the land for future crops.

## 3. Project Purpose and Outputs

To work together with indigenous specialists, institutions and communities to investigate and promote methods of sustainable management of riverine plantations on the periodically flooded riverbanks in the Amazon region which forms the frontier between Colombia, Peru

[1] Asociación para la Investigación Científica Sociocultural y Ecológica

and Brazil. The study seeks to compare traditional indigenous methods for management of low, mid and high riverine *chagras*[2] (*chagras de vega*[3]) with forest *chagras*. The team (from Colombian and British institutions) is collaborating with the indigenous communities of Colombia and contiguous Amazonian countries (Peru and Brazil), to study land use for cultivation of edible, medicinal, and ritual plants[4]. A series of workshops will bring key personnel (indigenous communities, institutions, government, private sector) together to identify and address problems affecting riverine *chagras* and look at ways of implementing sustainable management. This will have the objective of conserving biodiversity, improving standard of living for riverine communities as well as maintaining viable habitats for indigenous fauna. The sabedores (as) regard the forest as a botanical garden of all plants and the varzea[5] is the basic producer of food sustenance. Good nutrition is necessary to maintain health and this is considered by the elders to be addressing not only local needs but global ones.

The workshops and research will form a base for the production of educational packages for local communities planned for the third year of this project.

## 4. Progress

This reporting period forms the beginning of this project.

The project was scheduled to start in September 2003 but we carried out a field trip, in August 2003 (in Colombia – & borders with Peru Brazil, with Darwin consent) to introduce the new project to communities, institutions and organisations (governmental and non-governmental). Since September 03, the project has progressed as per baseline with a few additional outputs:

- Working with Eudocio Vigidimas (EV)
- Field trips to Leticia and surrounding areas Colombia, Peru, Brazil:

**August 03** (Blanca de Corredor (BdeC), Ann Mitchell (AMM),
**September 03** (BdeC)
**Nov/Dec 03** (BdeC), AMM, Alexander Gray (AIG), Nixon Cueva (NC), Jose Luis Rojas (JLR), Carlos Gutierrez (CG), German Benitez (GB), Rafael Andrade (RA);
**February 04**, **field trip** BdeC, AMM, GB, CG, RA (to Amazonas (Leticia, Tabatinga - Brazil, Santa Sofia, Macedonia, Puerto Nariño, Isla Cacão – Peru). **Workshop** held in

[2] **Chagra** – Traditional Indigenous Mixed-Species gardens cultivated by the indigenous people. They are normally of one or two hectares in size, to produce edible, ritual and medicinal plants for the family

[3] **Chagra de Vega –** plantations or "*chagras*" on the banks of white water rivers – areas, also known as várzea, which are flooded during the rainy winter season and planted in summer when the water level falls leaving a rich sediment on the river bank. The crops/species planted depend on whether the *chagras* are high, medium or low in relation to the river water level.

[4] **Ritual plants** - Plants used for rituals by indigenous ethnic communities. These plants are sacred and in many cases private/secret. Different ethnic communities use different plants ritually. Examples of such plants are coca (*Erythroxylum coca)*, tobacco(*Nicotinum tabacum)*, yage (*Banisteriopsis spp).*

[5] **Varzea** - The river Amazonas floods its river banks 50 Kilómetros inland into the jungle. When the river level goes down the water leaves a rich top soil – these large beaches are what we know as varzeas. As the water level goes down and exposes the beaches, the indígenas plant many products: yuca, corn, rice (14 varieties), beans, peanuts, fruits such as water melon, and other products such as the chiclayo beans from Peru – many varieties of beans. Once the water starts to rise the indígenas quickly harvest the products. The varzea zone is not burned or treated with chemicals ("artificial"/synthetic fertilizers). The only chemicals are the natural nutrients left by the river and forest when the water goes down.

*Resguardo*[6] Santa Sofia [comprises four – multi-ethnic communities including Tikuna, Bora, Cocama, Wayuu, Uitoto, Yagua] during which a medicinal plant garden was set up – (see Appendix 3, for photographs of workshop in Santa Sofia. Other communities, including Loma Linda, El Progreso, Macedonia and Puerto Nariño, put proposals forward to set up similar plots. The *abuelos-sabedores(as)*[7] consider these plots as demonstration plots, or miniature botanic gardens, of medicinal and other useful forest plants, such as those used in making artesanias, for future generations of the *Trapecio Amazonico*[8]. Children are also involved in preparation of similar plots with their schoolteachers and *Abuelos-Sabedores*. These plants have been named/identified in Spanish & specific local dialects such as Tikuna by the sabedores. We have already identified some plants in Latin Binomial (see below).

In the UK, AMM & AIG met on a number of occasions with Rodney Shearer (RS), Albatrees, Gladsmuir & Philip Mason (PM), Mycoconserve, Edinburgh, to discuss their contribution(s) to the project.
**February 04, field trip** (AMM, AIG, PM) in Scotland. We visited lochs, and the rivers supplying them, to film Scottish 'várzea' for comparisons to be drawn between UK & S. American land-management methodologies. This can be viewed as an additional output for the year and these data will be useful in future activities that will be developed over the period of the project (see below, research).

Research included initiation of surveys of várzea both in Amazonia and Scotland for comparative purposes. In Amazonia, in conjunction with *ACITAM*[9], two locations were selected in August 2003 for pilot plots (Santa Sofia & Macedonia, Colombia). The Santa Sofia work has advanced more rapidly than that of the Macedonia *resguardo* with the setting up of a medicinal plant botanic garden. This difference in development between the two *resguardos* may, in part, be due to the influence of the 'missions' (evangelists). Differences in religious beliefs between colonial evangelists and the indigenous communities seem to have affected the traditional use of medicinal plants in the area. It would appear that our project has rekindled the indigenous interest in protecting their knowledge of useful forest plants (e.g. Palo Sangre or granadillo, *Brosimum rubescens,* used for making artesanias) and other ritual and *traditional medicine*[10] practices for future generations.

In Scotland, the data collected on the Feb 2004 field trip included film and photographic evidence of the impacts of forest clearance, farming techniques and introduced exotic species (plant and animal) to Scotland. For example, Strathclyde University has implemented erosion-control measures of different types, including physical (large boulders in the form of a 'rustic' break-water built by the Gurkha Regiment over two summers) and natural (Alder - *Alnus glutinosa* planting along the loch edge; a water-tolerant native tree with nitrogen-fixing symbiotic actinobacterium *Frankia alni*), to

[6] **Resguardo** – an area set aside by the Colombian Government for the benefit of the indigenous inhabitants and the conservation of the ecosystem
[7] **Abuelos-Sabedores(as)** - indigenous wise men or wise ladies who, from conception/birth, have gained expert knowledge of plants, traditions such as medicines, managing the environment by following careers (e.g. dance, medicine, basket making). These careers are profound and can last around fifty years
[8] **Trapecio Amazonico –** South East "corner" of Colombia – bordering on Peru and Brazil.
[9] **ACITAM** – Asociación de Cabildos Indígenas del Trapecio Amazónico (Colombia)
[10] **Traditional Medicine** – medicines, usually of plant origin, that may consist of the resin, sap, an extract prepared in liquid such as water for oral, external, or other use (e.g. incense) used by local people. The knowledge of these medicines has been handed down through generations.

protect the riparine areas of its property on the eastern banks of Loch Lomond at Ross Priory, Gartocharn, Dumbartonshire. The study also included filming of the River Endrick, near Drymen, Stirlingshire, where it passes through farmland and subsequently flows into the N.Eastern side of Loch Lomond. The Endrick's banks are eroding in places, as most of the tree cover (mainly Alder) has been removed and replaced by grass pasture for sheep rearing. This has resulted in the silting-up of the river in places and at its estuary in N.E. Loch Lomond. Alder species do well on nutrient poor (eg. Low-Nitrogen) soil and can fix around 40-320 Kg/hectare/annum depending on species[11]. Alder does not retranslocate all of their Nitrogen when leaves senesce in Autumn therefore they enrich the soil at leaf fall.

Our project has also had an unexpected but beneficial development. The support of CG (Medical Physician, Universidad de Antioquia), GB (Medical Physician, Homoeopathist, Universidad Nacional de Colombia) and RA (Medical Pathologist, Clinica Santa Fe, Bogotá) has broadened the dimension of the project and brought in the importance of preservation and production of várzea plants used in preventative and curative medicine, at the same time as giving practical health counselling within the communities of the *resguardos*.

This group of medical doctors are already contributing a lot of voluntary effort to the project – within the limitations of their time and funding. They are currently putting together a project proposal for their side of the work to present to possible funding bodies, as their proposals are additional to those of the current project. Their proposal is to exchange knowledge between western and traditional medicine; this will obviously require resources from western medical aid. Dr. CG and colleagues at Universidad de Antioquia (Medellin) have promised entry to the university for two students (from indigenous *resguardos* in Amazonia), selected by ACITAM, to study subjects of their own choosing.

We continue to monitor security in Colombia for our activities, especially in the more remote areas (such as the *resguardos*). In addition, security problems have made it difficult for IES-CINOC[12] personnel to travel from Caldas and impossible for the rest of the project team to travel there. At present the search for alternatives is really just a precaution and is not expected to effect significant changes to the timetable or budget. Additionally, we have noted that our Colombian specialists from IES-CINOC have a very "western" approach to the work, which may not be very appropriate when working with *Abuelos-Sabedores*. We do not yet know if this is going to be a real problem for the project but we are currently looking into possibilities of alternatives e.g. using consultant agroforesters from the Universidad Nacional or possibly INPA, Manaus, Brazil (see timetable for next six months).

The project design that we have adopted is transferring the responsibility to the indigenous leaders, as co-organisers of events and taking the initiative in local activities of the project. This we view as essential to the ultimate success and exit strategy for the project. To this end more indigenous people than expected have been attending the workshops/meetings, which is encouraging (but expensive!). Indigenous groups from further afield, e.g. Araracuara (Caquetá), Guaiania, Vaupes, La Chorrera (Sr. Reinaldo

[11] http://freebiol.forest.wise.edu/forestry 415/tree structure/symbiosis/NFTchor.htm
[12] **IES-CINOC** – Colegio Integrado Nacional Oriente de Caldas. Technical Institution of further education (University), which is a provincial branch of the Universidad Nacional de Colombia.

Jiagrecudu, Uitoto) and Putumayo (Sr. Nubia Deka, Uitoto) have contacted Dra Blanca de Corredor requesting that we invite them to workshops / hold workshops in those locations as well!

**Timetable for next 6 month period**

**April 1- May 3, 2004**. **Field Trip** in Colombia, BdeC, AMM, AIG, AC, GB, CG, Eudocio Becerra Vidigimas, Isaias Román Sanchez, Ismael Mendoza Rivera. Bogotá, Leticia to communities Sta. Sofía, Ronda, Macedonia, Puerto Nariño, La Tacana (Km. 11 & community Km 14.5 Carretera Leticia-Tarapacá), Isla Cacão/Caballo Cocha Peru, Tabatinga Brasil.
**April 12-16, 2004**. **Darwin Workshop,** Banco de La Republica, Leticia. (see programme and invitations in Appendix 2).
**May 2-June 10, 2004.** Visit of Dra Blanca de Corredor to Scotland.
**June 2004.** Preparation for field trip and workshop in July.
**July 2004.** Field trip and short workshop (with, & organised mainly by, ACITAM and leaders from *resguardos*), in Amazonian communities and Leticia (Banco de La República).
**September 2004.** Preparation for field trip and workshop in October/November 2004. We are contemplating a trip to INPA[13], Manaus to seek field experts to help in varzea agroforestry eg. Consulting personal contacts in INPA such as Dra. Maria Theresa Piedade, Profs. Joachin Adis, Wolfgang Junk (Max Planck Institute).

## 5. Actions taken in Response to Previous Reviews (if applicable)

Not applicable (commencement of project).

## 6. Partnerships

The partnership with Dra Blanca de Corredor, Univ. Nacional, continues to flourish as does the collaboration with the Área Cultural, Banco de La Republica, Leticia (Director, Dra. Gloria Revello). We are setting up an association with Colombian colleagues called, Asociación para la Investigación Cientifica, Sociocultural y Ecologica (AICSE) and the act of constitution is being prepared with legal help in Bogotá at this time.

The partnership forged with IES-CINOC, Pensilvania, Caldas, has suffered from problems due to the security situation extant (see **4** above). This has not impeded the progress of the project so far (but see **4** above). The security problems have also made us wary of bringing other British experts (such as Dr Philip Mason, who does not speak Spanish) over to Colombia. We (AMM, AIG & BdeC) will, in the meantime, translate into Spanish and present the work prepared by them (e.g. in Powerpoint presentation) for workshops and publications, etc. ourselves. Collaborations have expanded with the inclusion of Colombian medical doctors, interested in traditional medicine use by indigenous people (GB, CG, RA, see **4** above), joining the team.

Dra Lucy Hoyos Ocampo (Nutritionist & Dietician), Universidad Nacional, Federación Naturista Colombiana (FENAT) and Naturaleza Y Vida in Bogotá, has shown interest in our project and will present a paper entitled: 'Alimentos autóctonos regionales de alto

[13] **INPA** - Instituto Nacional de Pesquisas de Amazônia, Manaus, Brazil

valor biológico' (Regional aboriginal food of high biological value) at the next Darwin workshop in Leticia (see plegable (Appendix 4, Exhibit 2.). Dra Hoyos will also demonstrate the high diversity and the value of local fruit & vegetable crops from the várzea of the trapecio amazonico in diet and health by providing a banquet lunch prepared from these products for participants on the final day of the April workshop.

## 7. Impact and Sustainability

Our Colombian partners have advertised the workshop scheduled for 12-16 April 2004, by sending out invitations, to leaders of local communities, resguardos, schools, scientific institutions in Amazonia, as well as Afiches (Posters) and Plegables (Programmes with timetable) announcing the workshop (see exhibits 2, 3 and 4a-h). These posters, etc, all carry the Darwin Logo [including the 'original' logo, which looked like an Amazonian parrot, that the local people really liked!]. Indigenous people and institutions from further afield are seeking affiliation with the project (see **4** above). Indigenous people from the resguardos have decided to start their own mini Botanic Gardens as showcases to the local population, especially the children/youth, and as a means of preserving the valuable species, some of which are in danger of being lost (see **4** above).

***ACITAM*** (footnote 3) and the *Abuelos-Sabedores* are heavily involved in the April 2004 Darwin Workshop and will front another workshop in the Banco de La Republica in July 2004 (see Timetable in **4** above). Youth from local schools and colleges are also invited to all our project activities. Our approach will hopefully yield sufficient critical mass from the local communities for the continued success of the project.

## 8. Post-project follow up activities

N/A

## 9. Outputs, outcomes and dissemination

This reporting period was for the first six months of this project, which was basically a start up period and preparation for activities commencing with workshops and research in April 2004. The first main workshop in Leticia was originally scheduled for March 2004 but was moved to April 2004 to suit the timetable in the Banco de la Republica and the local communities. An extra workshop was carried out in Santa Sofia in February 2004 – see Table 1, below.

**Table 1. Project Outputs (According to Standard Output Measures)**

| Code No. | Quantity | Description |
|---|---|---|
| 6A | 20 participants for 3 days | 3 day workshop in *resguardo* Santa Sofia for 20 sabedores, elders, community leaders – elders training younger members of the community in identification, location and use of medicinal plants of the varzea – in Tikuna and Spanish. Exchange of knowledge between medical specialist and elders. Initiation of a communal botanical garden – **additional output** |
| 8 | 14 | 14 weeks spent by specialist members of UK organisation |
| 17A, 17B | 1 | Dissemination network has been established between |

| | | |
|---|---|---|
| | | Colombian researchers, indigenous leaders and elders in Colombian, Peruvian, Brazilian Amazon , UK institutions |

**Table 2: Publications** – Not applicable yet

**10. Project expenditure**

**Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)**

| Item | Budget | Expenditure | Balance |
|---|---|---|---|
| **Rent, rates, heating, overheads etc** | | | |
| **Office costs (e.g. postage, telephone, stationery)** | | | |
| **Travel and subsistence** | | | |
| **Printing** | | | |
| **Conferences, seminars, etc** | | | |
| **Capital items/equipment** | | | |
| **Others** | | | |
| **Salaries:** | | | |
| **Blanca de Corredor** | | | |
| **Ann Mitchell** | | | |
| **Indigenous leaders/elders** | | | |
| **Consultant: Dr. Phil mason** | | | |
| **Secretaries** | | | |
| **Andres Corredor/assistants** | | | |
| **TOTAL** | | | |

Table3. indicates that the project is going according to budget. However, the way that the activities fall, we have not yet got all our expenses in for the workshop in April 2004. We are predicting that once we have these expenses collated, that we will be overspent in the area of travel, due to having to hire dedicated boat transport and car transport for team members due to security conditions in Colombia and borders. We will have a better idea of this possible overspend in June/July 2004.

## 11. Monitoring, Evaluation and Lessons

The UK and Colombian partners are visiting all the vital areas relating to the project despite the security problems faced from time to time. That is, we are monitoring progress directly. The purpose of the project is to work directly with the indigenous people. The fact that the indigenous people, *via* ACITAM (e.g. Sr. Augusto Falcon Perez and its president Sr. Rosendo Ahue) are increasingly taking responsibility for the running of the project locally is very encouraging. By working in this way we are building towards a clear exit strategy.

People with an oral tradition respond to audio-visual presentations more so than to written outputs. For example, many of the people we work with do not read or write Spanish and their native language (e.g. Yagua) is not yet a written one. We intend to present results, in the first instance, as filmed (VHS or DVD media) reports that people can access *via* the Library of the Área Cultural of the Banco de La República. In a recent visit we were able to access without problem VHS tapes from our previous Darwin Project (# 162/9/008) that are held in the Library for public access.

## 12. Outstanding achievements of your project during the reporting period – will be reported in next year's report.

We are working as a team **with** the indigenous sabedores(as), leaders, and ACITAM from the Amazonas region. Many of the people from these communities have accepted the project as their own. For example, the multi-ethnic community of Santa Sofia has set up demonstration plots (mini Botanic Gardens) as examples, for their community and others, of varzea plants that they consider important to conserve for health/traditions. Other communities are now making plans to have similar plots in their communities – Macedonia and Puerto Nariño. They have also taken the initiative in planning the April Darwin workshop in Leticia. These are very positive achievements for the project.

In relation to the April Workshop, invitations were sent to (and accepted by) Sabedores from other regions of the Amazon forest eg. Caquetá Medio, to draw comparisons between their expertise in relatively remote forests areas with those extant on the greater Amazon river where exploitation over the past 200yrs or so has been extreme. This will also allow us to compare our recent British Council-sponsored research experiences in Caquetá Medio (an area that we haven't been able to visit for about six years because of the security situation) with our current Darwin-sponsored work. Having sabedores like Isaias Roman Sanchez (from Araracuara), Eudocio Vidigimas (from El Encanto), Ismael Mendoza Rivera (from Monochoa) and Marceliano Guerrero Jekone (from Araracuara), all of whom are from the *Uitoto*[14], tribe in the project is viewed by us, and the indigenous leaders/ACITAM of the trapecio amazonico, as a very positive achievement.

[14] **Uitoto –** an indigenous tribe that has retained a lot of their traditional/ritual knowledge. They are greatly respected by other tribes.