Department of Geographical and Earth Sciences

UNIVERSITY of GLASGOW

MRes in Human Geography:

Space, Policy and Power

The Geographies of Biodiversity Conservation in People Dominated Landscapes – A Case Study of the Payamino Project in the Sumaco Region of Ecuador

This thesis is submitted in part fulfilment of the regulations for the degree of Master of Research in Human Geography in the Department of Geographical and Earth Sciences, University of Glasgow, UK.

28th September 2007

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Declaration of Originality

UNIVERSITY *of* GLASGOW

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ALL QUESTIONS MUST BE ANSWERED. "NOT APPLICABLE" IS A SATISFACTORY ANSWER WHERE APPROPRIATE.

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Project Title
The Geographies of Biodiversity Conservation In People Dominated Landscapes – a case study of the Payamino Project in the Sumaco Region of Ecuador.

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Position held

1. Describe the purposes of the research proposed.

The main aim of this project is to contribute to, and evaluate, the goals of the Payamino Project – a community based conservation programme in the Sumaco region of Amazonian Ecuador. To tackle this aim, the following research objectives have been generated:

- To identify and document factors which may influence future conservation practises by exchanging knowledge with community members. This will both enable the local community to become part of the research process and will provide a means of evaluating the long-term efficacy of conservation efforts.
- To investigate the management goals of the Payamino Project, how these are perceived within the local community and how these goals fit in with key debates in wider conservation and development literature.
- To investigate how this community conservation project sits alongside other protected areas in the region.
- To investigate how this community conservation project sits alongside other protected areas in the region and worldwide.

2. Please give a summary of the design and methodology of the project. Please also include in this section details of the proposed sample size, giving indications of the calculations used to determine the required sample size, including any assumptions you may have made. (If in doubt, please obtain statistical advice).

I will be working for the Payamino Project, living in the local community. Initially participant participation (involving quantitative biological research) will be important as I get to know the community and improve my Spanish. Data for the MRes project will include semi-structured personal interviews with key stakeholders including European and Ecuadorian Project and Research co-ordinators, guides and members of the local community and local government.

3. Describe the research procedures as they affect the research subject and any other parties involved.

We will be living and working with the community of San Jose de Payamino for one year, which could affect the community. We have been invited by them, however, and they have had contact with European researchers over the past 7 years. Research will be continuous throughout the year and we should fit into their daily lives without causing problems.

4. What in your opinion are the ethical considerations involved in this proposal? (You may wish for example to comment on issues to do with consent, confidentiality, risk to subjects, etc.)

As the participants have invited us to be involved in the community conservation project issues of consent should not be a problem. Our studies will be explained at length and specific consent will be sought for any personal interviews which take place.

Individual participants will not be named in any write ups unless specific consent is given and it is of relevance. Due to the nature of the work being studied and the project set-up already in place there is no danger of risk to any of the respondents.

One problem which will be apparent during interviews is that of language. I am currently learning Spanish however some of the older members of the community only speak a dialect of Kichwa. Previous work in the village has had few problems with this however as the community are very welcoming and willing to share ideas through interpreters. It is also hoped that over the period of the field season I will learn the local language and improve my Spanish.

5. Outline the reasons which lead you to be satisfied that the possible benefits to be gained from the project justify any risks or discomforts involved

This is an incredible opportunity to work in one of the most biodiverse and pristine habitats left in the Amazon Basin. The information this project gathers will add to the areas protected status and key exchanges of knowledge with the local community will help to gather momentum, importantly allowing the issues they feel strongly about to be incorporated into the management strategy.

For the Payamino Project itself this analysis of their goals comes 5 years into a 10 year commitment and will provide valuable review of past undertakings and future goals as well as adding to the baseline data on the area.

Much work in community conservation (or Integrated Community and Development Projects) has been criticised for not meeting either the goals of conservation or development but some how falling in between. There are very few examples of successful projects and this work will help to focus this project.

6. Who are the investigators (including assistants) who will conduct the research and what are their qualifications and experience?

Principal investigator – Martin Muir

Personal Experience

Summer 2003 - two months in Indonesia as a self-funded volunteer with OuTrop – a conservation research project studying the highly endangered Orangutan population. Working and living in central Borneo was my first experience of the difficulties of research in the tropics, the immediate nature and need for conservation and, most importantly, the need to involve local people and to find sustainable economic alternatives to forest destruction. This research was written up for my undergraduate dissertation.

Third Year – Treasurer of Tucumano 2004 Expedition to Southern Bolivia. This expedition gave me huge experience of running a student project abroad, understanding the key needs in a biological research project and considering the South American landscape for the first time, as well as the chance to learn a little Spanish.

Fourth Year – Leader of the University of Glasgow **Gambia 2005 Expedition** – a multi-disciplinary two-month expedition to the River Gambia National Park aiming to facilitate a variety of Zoological research projects, along with a conservation based education program for local school children and the building and stocking of a community library. As well as being actively involved in all of the research projects this expedition gave me further experience of proposal and report writing. A number of documents are available including the full project report. This expedition was funded by the University of Glasgow, the Royal Geographical Society (with IBG), The Royal

Scottish Geographical Society, The Carnegie Trust and The Peoples Trust for Endangered Species amongst others.

2006 – 7 month internship with the Whale and Dolphin Conservation Society – a global NGO working to protect cetacean species.

7. Are arrangements for the provision of clinical facilities to handle emergencies necessary?
If so, briefly describe the arrangements made.

Not applicable.

8. In cases where subjects will be identified from information held by another party (for example, a doctor or hospital) describe the arrangements you intend to make to gain access to this information including, where appropriate, which Multi Centre Research Ethics Committee or Local Research Ethics Committee will be applied to.

Not applicable.

9. Specify whether subjects will include students or others in a dependent relationship.

No.

10. Specify whether the research will include children or people with mental illness, disability or handicap.
If so, please explain the necessity of involving these individuals as research subjects.

No.

11. Will payment or any other incentive, such as a gift or free services, be made to any research subject?
If so, please specify and state the level of payment to be made and/or the source of the funds/gift/free service to be used. Please explain the justification for offering payment or other incentive.

No.

12. Please give details of how consent is to be obtained. A copy of the proposed consent form, along with a separate information sheet, written in simple, non-technical language, MUST ACCOMPANY THIS PROPOSAL FORM.

See box below for consent sheet. For interviews carried out in Spanish this was explained aurally and participants considered as consent.

Name:

Signature:

Date:

This interview is taking place as a primary data collection stage of the thesis produced for the degree of Master of Research in Human Geography: Space, Polity and Power at the University of Glasgow, UK.

The main aim of this project is to critically evaluate the role of the 'Payamino Project' as a conservation *and* development programme working with the community of San Jose de Payamino in the Northern Oriente region of Amazonian Ecuador.

To tackle this aim, the following research objectives have been established:

- To investigate and evaluate the management goals of the Payamino Project, how these are perceived within the local community and how these goals fit in with key debates in wider conservation and development literature.
- To identify and document factors which may influence future conservation practises by exchanging knowledge with community members. This will both enable the local community to become part of the research process and will provide a means of evaluating the long-term efficacy of conservation efforts.
- To investigate how this community conservation project sits alongside other protected areas in the region.
- To contribute to the project objectives by working with the local community.

This project will go some way towards keeping track of the progress the Payamino Project is making, to evaluate work already done and to focus future undertakings. Data collected will also be incorporated into the production of a short-term action plan for the project and community produced in both Spanish and English.

Interviews will be recorded (with permission) and later transcribed. Audio and transcript files will be stored electronically under password protection. Both sources will be made available to interviewees on request. All interviewees will be given the option to anonymise their input and withdraw from the study at every stage, and will be offered copy prior to submission and possible future publication.

While those opinions expressed in the interview will be attributed to the (anonomysed) interviewee, all responsibility for the incorporation of views into the final product remain those of the author.

Do you permit this conversation to be recorded and information/views you provide to be incorporated into an MRes project and possible subsequent publications?

- Yes
- No

Do you wish your opinions/views/answers to be anonymised:-

- Throughout
- If published
- Not at all

Would you like to receive:-

- A copy of the transcription
- A copy of the finished thesis
- A copy of any follow up publications
- An aural report of findings

13. Comment on any cultural, social or gender-based characteristics of the subject which have affected the design of the project or which may affect its conduct.

Working in a foreign country is always going to bring challenges, language being an obvious one. The community of San Jose de Payamino are used to working with European scientists and have been extremely welcoming in the past. It is not envisaged that there will be any problems on this front. We intend to live and work in the community and hope to be welcomed as previous visitors have been.

14. Please state who will have access to the data and what measures which will be adopted to maintain the confidentiality of the research subject and to comply with data protection requirements, e.g. will the data be anonymised?

In the case of qualitative data, it will be anonymised if requested. All data will be kept in secure locations and digital/electronic data will be kept under password control if it is deemed necessary.

15. Will the intended group of research subjects, to your knowledge, be involved in other research? If so, please justify.

Guides will be involved with other biodiversity studies continuing in the area but no other qualitative research.

16. Date on which the project will begin ..... June 11th 2007**.....and end ...**Sept 28th 2007

17. Please state location(s) where the project will be carried out.

The Sumaco Forest Reserve, Northern Oriente, Sumaco Region, Amazonian Ecuador.

18. Please state briefly any precautions being taken to protect the health and safety of researchers and others associated with the project (as distinct from the research subjects), e.g. where blood samples are being taken.

A full risk assessment has been carried out as required by the University Court Expeditions Council. All medical, health and safety requirements of the researcher have been considered and eliminated where possible.

Name___Martin Muir_____ **Date** ___22/06/07_____
(Proposer of research)
Where the proposal is from a student, the Supervisor is asked to certify the accuracy of the above account.

Name_____ **Date** _____
(Supervisor of student)

COMMENT FROM HEAD OF DEPARTMENT/GROUP/INSTITUTE/CENTRE
Name_____ **Date** _____

Acknowledgements

I would like to offer my thanks to Prof. John Briggs and Dr. Gordon Dickinson for their help, advice and direction throughout the past year. Also, to Dr Stewart White who first suggested working in Ecuador and who has been so incredibly helpful throughout the planning and execution of this adventure.

Thanks to the Payamino Project management team for being so enthusiastically welcoming and to Darwin Garcia and the community of San José de Payamino for agreeing to have us to live and work with them. Special thanks to all of those who were willing to give up their own personal time to be interviewed. I thank you all for your openness and honesty with me.

Thanks to the Twycross Zoo Conservation Award, The Royal Geographical Society, The Gilchrist Educational Trust and the Duke of Edinburgh Award No.2 and to all of those who contributed to fundraising efforts to help cover our living costs while working for the Payamino Project.

Finally, and most importantly, thanks to you Anna for the many hours spent discussing these issues and translating documents, for reading and re-reading drafts and offering advice throughout, for putting up with me when research got hard and for keeping me motivated and stocked up with chocolate milk and goodies during the long days and nights writing up. I hope I can repay the favour when the time comes. Without you none of this would have been possible.

Abstract

This report describes and evaluates work carried out with the Payamino Project in the Sumaco Region of Ecuador from June to September 2007.

The conservation of biological diversity has emerged over the past thirty years as one of the most important and critical global challenges confronting national governments and world bodies alike. Countries throughout the world are facing increasing biodiversity loss as a result of human activities and in an attempt to placate this loss numerous protected areas of varying designations have been created. However, “the creation of a protected area can have strong implications on the livelihoods of people inhabiting the forest and depending on it, especially those caught within its borders.” (Mbile et al, 2005:1)

This report provides an up-to-date review of the emerging Geographies of Conservation concerned with the increasing expansion of protected areas into people dominated landscapes. It considers in detail the Reserva Biosfera Sumaco and the differing management zones in this area, focusing on the role of a community based conservation programme: the Payamino Project. I discuss and evaluate the project’s aims and objectives, the current management structure, the problems and successes of the project and contemplate the future goals. The report concludes by offering four immediate and two long term recommendations necessary to continue the Project’s success.

Overall, this report shows evidence that, while there are areas which could be improved, the Payamino Project is a successful community conservation programme which clearly integrates both environmental and developmental goals. In this case conservation and development do seem to be intrinsically linked in the management of this area and hence there is a positive outcome and hope for further success in the future.

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Chapter 1 – Introduction and Background

1.1 Politics, Natural Resource Exploitation and Mega-diversity in Ecuador

Ecuador is a federal state with presidential elections and congressional elections held every four years, a year apart. It has a highly tumultuous political past, in the last 20 years alone there have been seven Presidents most of whom have come to power through coups of one sort or another. The country – the smallest in South America with just over 13.4 million residents, is split into 22 provinces (see Figure 1.1 below), which themselves are then split into Cantons and then Parroquias. In 2006 Rafael Correa, a left-leaning, socially and environmentally responsible candidate, was elected President promising to reduce poverty and increase the protection of both the environment and traditional cultures. Situated in the North of South America the country had strong economic links with the United States of America (USA) and indeed, following a period of increasing financial insecurity, with the highest levels of inflation in the region Ecuador stabilised it's currency against the US in 2000 and now uses the Dollar ($) as its currency. President Correa has now joined other left-leaning presidents in the region – Chavez of Venezuela and Morales of Bolivia – in criticising America and driving the patriotic nationalism of the area aiming to make the natural resources available in their countries work for the people, not for foreign companies (BBC Country profiles, WWW).

Figure 1.1– Map of Ecuador Showing Provinces and Habitat Zones

(adapted from Exploring Ecuador, WWW)

Although still considered a developing country, Ecuador benefits from an enormous array of natural resources including timber, precious minerals such as Gold and in particular oil. Oil production started 1972 and in 1992 Ecuador withdrew from OPEC so it could produce more oil. Oil has had a huge economic impact on the country, lifting many from poverty although this has mostly been to the benefit of a few, especially missing the indigenous populations (BBC Country Profiles, WWW). Accessing these resources has huge environmental and social costs, however the economic gain possible still drives these companies into more remote areas often in conflict with local communities and protected areas. The Ecuadorian Government sells off blocks of land, or concessions, to oil companies who then have to negotiate with the indigenous land owners to be able to drill for oil. In Ecuadorian law indigenous communities have rights only over the surface layer of the land, not what lies under it nor the water course. This means that the indigenous communities get nothing if the companies find oil. The community of San Jose de Payamino is one of only a handful of communities in Ecuador who have said no to oil companies, even in the face of offers of vast sums of money, and threats to the lives of village leaders.

While Ecuador occupies only 0.2% of the surface of the planet it is home to over 18% of the world's bird species, 10% of amphibians, 18% of orchids and 8% of mammals. Proportionally to its size Ecuador is, in fact, the country with the highest biodiversity in the world and is classified as one of the 17 megadiverse countries on the planet (SNAP, 2006, Chape et al, 2003) This is due in part to the wide variety of habitats present in this small country, ranging from the high Andes to the Galapagos to the vast expanse of the Amazon Basin (see Figure 1.1 above for the four distinct habitat zones). There are twenty six officially designated protected areas in Ecuador covering 18.1% of the land surface and a vast marine reserve (SNAP, 2006; see Chapter 4). There are also numerous other privately protected areas and three vast biosphere reserves. Recent analysis shows that this area is increasing year on year into increasingly people dominated environments (Naughton-Treves et al, 2006) with both the expansion of state-led and privately run conservation and sustainable management groups.

1.2 The Payamino Project

The **Payamino Project** is one such private project set up to conserve indigenously owned primary lowland rainforest. The project was officially initiated in 2002, through a partnership between the indigenous community of San Jose de Payamino, Zoos Go Wild (an in-situ conservation program co-ordinated by a number of European zoos) and Aalborg zoo (Denmark), in order to protect the wildlife and culture of the area. It has since developed into a thriving community conservation project, with the help of a growing number of supporters and partners, who "have helped to keep oil companies and illegal bush meat hunting at bay, while giving the community back their dignity and control of their own destiny and culture" (Payamino Project, WWW).

The University of Glasgow has been involved in the project since its inception through Dr. Stewart White of the Division of Environmental and Evolutionary Biology (DEEB). He has worked with summer expeditions since 2000 to build a picture of the ornithological abundance in the reserve. So far over 250 species have been recorded and more are added every year. For the past two years DEEB have also run a two week field course to the area for final year undergraduate students concerned with Tropical Rainforest Ecology. Manchester University are also involved with the project and hold field courses here. They work in collaboration with Kew Gardens and The Natural History Museum and have just started a first PhD project collecting data in the area. This year sees the first long term data collection carried out in the area, and the first time Europeans will have lived with the Payamino community. Two DEEB MSci students and myself will be working for the Payamino Project as Research Station Managers and Research Co-ordinators. Year long studies of the amphibian and fish communities will be carried out as well as camera trapping of mammals in the area.

The research in the Payamino region conducted by both Glasgow and Manchester Universities is a distinct and integrated part of the conservation aims of the project. The Payamino Project not only involves a commitment to conserving the flora and fauna of the area however, but also to preserve the culture of the Payamino community.

1.3 The Community of San Jose de Payamino

The community of San José de Payamino is a Kichwa community of approximately 280 people split roughly into 60 families. They traditionally own the rights to around 60,000 hectares of primary lowland rainforest. The majority of the community speak Spanish although some of the older men and women only speak their unique dialect of Kichwa.

Traditionally power in the community would have rested in the hands of one powerful shaman who would make decisions over disputes and who was incredibly skilful with the medicinal plants available in the forest. In 2002 however, the shaman died and when shortly thereafter his replacement died of a snake bite nobody wished to take over a position which was seen as dangerous. There are now a number of less powerful shaman and instead the decision making process in the community is now split between a yearly elected president and a number of other leaders. Because the community is so large, and the area in which they live so large, the community is split into four working groups each of which has a separate leader, only some of whom are the new shaman. It is difficult to know how big a part the shaman plays in modern day life as community members were reluctant to talk about it but they definitely do still visit the shaman at times, making payment with money if possible but if not with chickens or other objects of worth. I did visit one shaman (Figure 1.1 below) who lives near the main village and who told stories of taking a brew of hallucinogenic plants and 'visiting' the city or the mountains or communing with 'jungle man' – one of the three native Gods of the area (the others being Juri-Juri – a God throughout many Kichwa and other Andean communities, and Anaconda, the God of the water). Again when questioned, community members laughed off these tales instead indicating that the community, like most of Ecuador, has been Catholic for at least the last 40 years.

Figure 1.2 – Photos of San Jose de Payamino

Top – the village of San Jose de Payamino. **Bottom** – **Left:** Sunrise over the Rio Payamino; **Centre:** Once the part of the Payamino Territory the Volcán Sumaco is now an integral part of Parque Nacional de Sumaco Napo-Galeras; **Right:** One of the Payamino shaman we visited.

There is a main village built by the Government (a small area of which is pictured above, Figure 1.1), in which around 35 families have a house. It is unclear why the others do not, but looks likely that they only attend the village irregularly for meetings and have little need to stay, especially if they no longer have children of school age. The village has a large community hall, offices of both Parque Nacional and Junta Parroquia, a football pitch and volleyball court and a school. The school was built with money from PetroEcuador, an oil company with concessions in the Payamino area; the teachers, tables and chairs are paid for by the Municipal government and the books and matriculation fees are paid for by the Payamino Project. Bi-lingual education was first introduced in 1968, by the father of Darwin Garcia (PP Ecuadorian Project Coordinator) and teaching has been taking place ever since. Primary school takes place during weekday mornings and a distance learning high school takes place on Friday afternoons and Saturdays. Participation has increased rapidly since the project became involved.

The community spend little time in the village although when school is in session numbers do increase (especially at the weekends when teenagers and adults arrive for high school). This is because there is little land around the village available for individual use for cultivation so food is in short supply. Families have a large house in the forest, usually on or near the bank of a river as transport is most often and most easy by canoe, where they grow yucca, plátanos verdes, bananas, malanga, cacao and many

other plants which make up the vast majority of a normal diet. The community also hunt for meat in the forest, eating everything from monkeys to paca (forest pigs) and eat a number of fish species from the river. The community are significantly modernised, now wearing western-style clothes and around twenty years ago they stopped using traditional methods of hunting such as blowpipes, traps and spears and now rely on shotguns, weighted fishing nets and occasionally dynamite.

Normally the village is used for community meetings which take place regularly. The community is very well organised politically, with every decision being made by consensus voting. Indigenous people in Ecuador pay no taxes and each family can claim $30 every two weeks to help with costs of food and education. At the start of the school term the local government provides families with children in school with a 20kg bag of rice and some other foodstuffs. They also get an allowance of gasoline for the two motorised canoes the community owns and for a generator which irregularly provides electricity to the village.

1.4 Aims and Objectives of this Research

Community conservation became an increasingly popular as a way of integrating conservation and development paradigms in the developing world in the 1990s. It has been criticised, however, for failing to meet either conservation or development goals (Berkes, 2004) and in many cases for not recording or analysing the process in enough depth.

The main aim of this project is to critically evaluate the role of the 'Payamino Project' as a conservation *and* development programme working with the community of San Jose de Payamino in the Northern Oriente region of Amazonian Ecuador.

To tackle this aim, the following research objectives were established:

- To investigate and evaluate the management goals of the Payamino Project, how these are perceived within the local community and how these goals fit in with key debates in wider conservation and development literature.
- To identify and document factors which may influence future conservation practises by exchanging knowledge with community members. This will both

enable the local community to become part of the research process and will provide a means of evaluating the long-term efficacy of conservation efforts.

- To investigate how this community conservation project sits alongside other protected areas in the region.
- To contribute to the project objectives by working with the local community.

This research project will go some way towards keeping track of the progress the Payamino Project is making, to evaluate work already done and to focus future undertakings to enhance the argument for continued protection of this area.

Chapter 2 – Literature Review

2.1 Introduction to the Geographies of Conservation

Although biodiversity conservation is not traditionally considered the domain of the human geographer, recent work at the intersection of political, cultural and applied ecology (Adams and Hulme, 2001; Berkes, 2004; Zimmerer, 2000, 2006) has firmly placed the new geographies of conservation in the sphere of geographers interested in development, understandings of 'nature' and multispatial analysis of the expansion of protected areas into increasingly human dominated landscapes. "This recognises conservation as a social and political process that necessitates full consideration of the economic, political and social, as well as the ecological and environmental, impacts of different courses of action." (Brown 2003:89)

In this review I will attempt to cover much of the ground discussed in the geographical and related literature. I will look at the multiple scales in protected area designation; much of the work will then focus on a discussion of the recent paradigm shift from exclusionary to participatory conservation management, and finally I will consider multi-spatial geographies in the focus and future direction of conservation. Firstly, though, I will examine the philosophical and theoretical underpinnings of the emerging geographies of conservation.

2.2 Philosophical and Theoretical Underpinnings of the Emerging Geographies of Conservation

"The very establishment of 'wilderness' reserves from a sacred hunting and living space are all human acts. They are, moreover, political ones. Each decision and counter decision is borne of bureaucratic incentives, economic pressures, and the changing powers of rangers, legislators, hunters, concession companies, hoteliers, ranchers, visitors, environmentalists, and scientific experts in an ongoing struggle." (Robbins, 2004: xvi)

Protected area management arose from a philosophy focussed on wilderness, species and natural ecosystems. This *compositionalist* philosophy (Callicott et al, 2000) removes the role of humans as they are not considered 'natural' (with possible exception of indigenous peoples who would be considered to live a balanced life, solely utilising natural resources, neither harming nor benefiting the local environment). "The

general expectation was that human use of resources would invariably affect biodiversity in a negative way…. Deriving from this philosophy, much conservation has had the goal of the preservation and restoration of biological diversity and integrity" (Robinson, 2006:663). This has resulted in the establishment of exclusionary parks and protected areas as the historic precedent in biodiversity conservation.

Opposing this viewpoint is an increasingly popular *functionalist* philosophy which focuses on maintaining dynamic ecological processes explicitly including the fact "human influence on the world is pervasive" (Robinson, 2006:663). Functionalist approaches include concepts such as ecosystem health, ecological sustainability and sustainable development (Callicott et al., 2000). Indeed, "functionalism, when taken to the extreme, considers all anthropogenic modification of ecosystems as natural as any other change, no matter how massive and destructive" (Robinson, 2006:663). Of these meta-narratives, functionalism has become increasingly rooted in international conservation programmes: and as Robinson notes "these values are informing our conservation science" (2006:664). Human populations are now only very rarely excluded in management plans and many resources are aimed at including local people: they are employed and educated; encouraged to value their natural environment and to understand why it is necessary to protect it. Indeed, there has been a great emphasis put on conservation science being carried out with, or solely by, host country nationals (Gomez et al, 2004) and it is difficult to gain international funding without this being at the forefront of research proposals. Alongside this there has been a call for an increased dialogue not simply between western and host country nationals, but also between the natural and social sciences with regard to conservation management. Zoologists, botanists and ecologists have long been at the forefront of management but with the increasingly human dominated focus in conservation, management plans need to incorporate the views of those more accustomed to evaluating development goals.

What Robinson describes as 'values' are those factors which "influence the scientific questions we ask, affect how experiments are designed, and what data are collected" (2006:661) and could perhaps better be expressed in terms of meta-narratives or methodologies. Robinson argues for the need to build both 'values' and science into arguments for conservation, "it is not facts *or* values, but can be both...the incorporation of values in conservation models does not imply a rejection of scientific rigour and analysis" (Robinson, 2006:661). He offers two extremes in this regard: firstly, to

continue purely along relativist lines of scientific objectivity we run the risk of becoming too discrete and less relevant to those actually involved in management practises, providing data but no interpretation. This approach still persists however, "in terms of policy and projects still persists, in spite of all the criticism it has attracted… It appeals to standards of professional excellence, technology transfer, and universalised and administratively simple solutions." (Blaikie, 2000:1042)

On the other hand Robinson argues a postmodern approach, for example, could lead to conservation becoming too fractured, leading to the production of "empty policy statements". He continues to argue that postmodernists dispute the "very existence of 'nature' and 'natural' … that scientific objectivity is naïve, that all is value and can only be understood in the political and social context." (Robinson, 2006:661) Postmodernist thinkers have tried to deconstruct the development debate, and the same could be done for conservation, to reject modernization as inevitable and to respect local diversity and local agendas. It removes the right of the author to (re)present, and challenges the all embracing worldviews to focus on local issues. Postmodernism accepts that truth is variable and negotiable and is aware of the power relations in knowledge construction, priorities, agendas and goal setting. It questions how knowledge is constructed – by whom and for whom – and attempts to give voice to less powerful groups by questioning the role of 'expert' knowledge. Postmodernists are intrinsically aware of their own place in research – their situatedness and positionality which affects all presentation of 'facts'. (Blaikie, 2000; Briggs, 2005; Briggs and Sharp, 2004; Sharp and Briggs, 2006; Cook et al, 2005)

Postmodernism is not without its critics too however, with many arguing that it doesn't actually 'do' anything to make life better for those who it tries to empower. For each side of the debate there are positive and negative arguments too plentiful and detailed to go into here. It is interesting to note however a recent edition of The Geographical Journal edited by Sharp and Briggs (vol 172.1) looks into opening the debate between development theorists and postcolonialists, attempting to find common ground to move forward and re-structure so as to avoid the situation as postulated by this papers opening quotation. They state "development needs a more expansive notion of agency and power, while postcolonialism needs a better understanding of 'the structuring role of resources and institutions in the creation and maintenance of networks'." This is no less

true when considering community conservation projects which incorporate developmental goals.

Zimmerer (2000) terms this incorporation of human and natural systems ‘second nature’. His paper ‘The Reworking of Conservation Geographies” provides an influential overview of the need to understand landscapes in flux as a dynamic system and maps out the “current boom in conservation [which] is, I claim, an arena of proliferating nature-society hybrids.” Zimmerer is at the forefront of the new geographies of conservation and his recent (2004, 2006) work published in *Progress in Human Geography* on the interaction of political and cultural ecology offers a “developing variety of interdisciplinary perspectives to offer fresh insight into the worldwide expansion of conservation areas” (2006:63). Many of the ideas in the following sections of this paper build on this work.

2.3 Multiple Scales In Protected Area Management

"There is not a single definition of 'a park'. Rather, parks fit into a variety of categories and incorporate people and their economic endeavours in different ways. Parks set out to achieve different things, and they suit different situations."
(Redford et al, 2006:2)

In 2003 a little over 10.8 per cent of the total land area of the world was designated as a Protected Area Category I-V by the World Conservation Union (IUCN) (Earthtrends, WWW). Of this vast area – a figure around the 7.7million km^2 mark, over a third (4.3 per cent of total land area) is "found in categories that can impose considerable restrictions on human use and occupancy." (West et al., 2006: 251) These figures do not even include marine protected areas which cover a further 4.2million km^2 of the planets oceans and in many cases impose large livelihood costs on some of the poorest communities in the developing world through the management of fisheries (Lourie & Vincent, 2004; Ahmed et al, 2004; Bennett, 2004).

Following the Earth Summit in Rio de Janeiro in 1992 the IUCN made an effort to classify and quantify the different types of protected area being managed worldwide. They compiled a system of six 'Protected Area Categories' as follows

Category	Description	World land area designated (000 km²)
I (a and b)	Strict nature reserve, wilderness protection area, or wilderness area managed mainly for science or wilderness protection.	438,448
II	National Park, managed mainly for ecosystem protection and recreation.	
III	National Monument, managed mainly for conservation of specific natural features.	326,503
IV	Habitat/species management area, managed mainly for conservation through management intervention.	
V	Protected landscape/seascape, managed mainly for conservation or recreation.	
VI	Managed resource protected area, managed mainly for sustainable use of natural resources.	692,723

Table 2.1 – IUCN Protected Area Categories (amended from IUCN, 1994; Naughton-Treves et al., 2006; Earthtrends, WWW)

This scale from fully exclusionary (categories I & II) to highly inclusive conservation (category VI and 'other') shows the full range of protected area management practise. Category I areas are relatively rare and are the most exclusionary, with access being

granted only to scientists. Category II areas are the most common 'National Park' areas such as Yosemite and Yellowstone in America or the Kruger National Park in South Africa (WDPA, WWW). These areas are exclusionary in terms of habitation but allow people to make use of the area for recreation and tourism. Because these areas were created with little consultation, and in some cases the complete removal of indigenous peoples, "advocates for local people focus much of their scorn on the most exclusive categories 1 and 2 (Strict Nature Reserves, Wilderness Areas, and National Parks)." (Redford et al, 2006:1)

Those areas of increasing interest to geographers however, and now the largest by land area, are the category 'VI + Others' areas, as well as the UNESCO Man-and-the-Biosphere Reserves, where people are included as a fundamental part of the ecosystem. Indeed, "landscapes that are inhabited, anthropogenic, and utilized are a prominent feature of these new myriad socio-spatial designs… these hybrid rich landscapes are produced, moreover, as new territories of conservation." (Zimmerer, 2000:358)

This scale of protected area management is not complete with a simple overview of the IUCN guidelines however. The World Database on Protected Areas, from which the figures in table one derive, records only state activity and so is blind to individual and informal collective activity. West el al. (2006) argue that this factor increases the area of land managed in this way by a vast amount. They cite the case of South Africa where private game reserves cover 13% of the country's land mass compared with a further 6% set aside at a state level (and so recorded in these figures).

These figures also do not include UNESCO Man-and-the-Environment Biosphere Reserves. These areas cover truly vast areas of land (in 2003 four hundred and eight sites world wide covered 4.4million km^2 of land), often encompassing other Protected Areas and the surrounding environment, increasing buffer and transitional zones which in theory should help to protect the core areas (Southworth et al., 2006). Biosphere reserves were produced with the aim of creating a world network of protected areas highlighting key habitats. They focus on reducing biodiversity loss, improving livelihoods, enhancing social, economic and cultural conditions for environmental sustainability and thus aim to contribute to the pursuit of the Millennium Development Goal 7 on environmental sustainability (UNESCO, WWW). This focus on the sustainable use of resources by people highlights the increasing collision of

conservation and development theory and management. As more land is managed with the aim of conserving biodiversity, more ‘users’ of this land could find themselves at odds with the management strategy, leading to increased tensions and disillusionment with protected area management, especially if there are not sufficient resources to back these goals.

2.4 A Paradigm Shift in Management Practises

"Many commentators attest to a paradigm shift in biodiversity conservation, away from exclusive protected areas towards more people-centred or community based conservation." (Brown, 2003:89)

Over the past thirty years, there has been a markedly changing focus in global conservation strategies, from the broadly exclusive protected area 'fortress conservation', where armed guards are employed to keep people out and biodiversity in (Brockington, 2002) to highly inclusive community conservation areas where "conservation cannot and should not be pursued against the interests and wishes of local people" (Adams and Hulme, 2001:193).

After the heavily state centred, 'top-down' approach to protected area management which was extensively promoted during the 1950s and 1960s "the trend has shifted towards encouraging decentralised, local and participatory forms of governance" (Southworth et al., 2006:89) The traditional 'park' – where the term 'park' refers to "protected areas in general, including wildlife reserves: areas where land use is restricted mostly to wildlife and the preservation of 'natural' existing habitat" (*ibid*:87) – was classically approached with the thought of defending the 'natural' environment, keeping the majority of people out (except those who could afford to pay to visit this 'wilderness') and in many cases forcibly removing local human settlers (Adams, 2004) These protected areas have been recognised (and are increasingly being seen again to be a worthwhile component of the conservation lexicon) for their value in the conservation of biodiversity. However, their establishment and management often impose high direct and opportunity costs to the local residents who "have to forego natural resource extraction" (Brooks et al., 2004: 616), therefore resulting in tensions between the local people and management.

'People-park conflicts', as they have come to be known, are particularly acute in tropical regions where people depend upon high biodiversity for their livelihoods (Southworth et al, 2006). While exclusionary approaches have been shown to be successful in some instances, especially at protecting forest cover rather than particular enigmatic species (which are difficult to protect from poachers no matter how many resources are employed) they do not "reflect a nuanced understanding of social and political patterns and dynamics of rights in land and resources" (Redford et al, 2006:1).

Criticisms focus on three issues: that the direct costs (employment, infrastructure, re-homing, defence etc.) may outweigh benefits, that the costs in many cases will be borne by certain social groups who can least afford it, who are not compensated, and who may lack the resources to object (e.g. poor rural communities), and the implementation of some projects may be planned and imposed without consultation. (Adams and Hulme, 2001:198) Because of this, conservation programmes are increasingly being challenged to become more inclusive, more 'people orientated' and progressively community based (Berkes, 2004; Brooks et al., 2004).

This move from exclusive to inclusive conservation management has been termed the 'new conservation' (Berkes, 2004; Brown, 2003; Gray 2005; Zimmerer, 2000) and there has ensued some debate as to how the move has occurred. Brown (2003) argues that the reconceptualisation of conservation has been formed through three interlinking progressions: the move of policy focus from state to community; the upsurge of ideas of sustainable development, utilisation of resources and ecological dynamics; and the increasing desire to incorporate neoliberal ideals and market forces to make conservation 'pay'.

Berkes (2004) also identifies three conceptual shifts in applied ecology which have greatly influenced conservation practise. Firstly he notes the shift from a reductionist scientific methodology towards a systems view of the environment. Rather than ecological dynamics being simple, straightforward processes which can be tested with a null hypothesis and a series of rigorous experiments, instead scientists began to consider the complex nature of ecological interactions including non-linear relationships, uncertainty and self-organisation. Next Berkes stresses the ensuing shift towards the inclusion of humans as part of the ecosystem, both as a potentially positive and negative effect, but either way as a part of the 'natural' order which must be incorporated into management plans. Finally he argues of the shift from solely expert-based approach towards the far more prominent participatory approaches to conservation and ecosystem management we see today.

"Two of society's greatest ethical obligations are the stewardship of nature and the concern for the livelihoods of our fellow human beings." (Robinson, 2006: 664)

Much of the work of interest to the human geographer has followed the increased discussion over the role, possibility and internal contradictions in the development of a

sustainable development paradigm. It is widely accepted now that there must be incentives for local people, especially in the developing world, to engage in biodiversity conservation (Folke, 2006; Southworth et al, 2006; Robinson, 2006) These incentives may range from payment of locals as guides, providing markets for sustainably produced goods, building amenities such as libraries or skill centres, or providing access to health care and education.

Robinson discusses the role of the 1987 Bruntland report – the first UN mandate famously to define sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs", and in doing so explicitly links conservation and development. Indeed, it continues to state that we must recognise, "in view of the global character of major environmental problems, the common interest of all countries to pursue policies aimed at sustainable and environmentally sound development." (Report of the World Commission on Environment and Development, 1987) This is a broadly functionalist philosophy (Callicott et al, 2000) but its incorporation into conservation policy has not been accepted uncritically – many believe in fact that conservation and development goals are not the same and that we should not discount exclusionary approaches as after all, how can a conservation project, whose aims are ultimately to protect forest cover and biodiversity, be successful if hunting for food, use of timber for fire and construction are permitted or encouraged? (eg Adams, 2004; Frazier, 1997; Brockington, 2002)

Indeed, Robinson (2006:665) argues that that central tenet of sustainable development "that improved livelihoods (as measured by poverty alleviation, greater access to technology, more effective resource management, and greater social justice and equity) are concordant with biodiversity conservation" has rarely been tested scientifically but has been accepted uncritically. It has also been argued that there has, in fact, been a decline in the use of sustainable development as a concept in favour of poverty alleviation, reduction and eradication. Conservation has, therefore, been devalued also – incorporated as a 'desirable consequence' rather than a primary objective (Frazier, 1997, Adams et al., 2004).

"Community conservation is not one thing but many… within the all encompassing narrative of CC lies a wide diversity of quite different kinds of projects" (Adams and Hulme, 2001: 193/194)

Indeed, Adams and Hulme continue, community conservation encompasses a wide continuum. At one end, community conservation projects focus on targeting the expansion of traditional exclusionary protected areas into buffer or transitional zones (this is often an attempt to involve local people post-park-creation). These projects attempt to protect the core 'park' area by involving local border communities, offering economic incentives and education on viable alternative long term sustainable land-uses. These may have a less negative effect on biodiversity whilst still allowing economic gains to be made from the land, for example the planting of shade grown coffee which allows forest cover to remain in tact (Berkes, 2004).

At the opposite end of the community conservation continuum is community-based natural resource based management (CBNRM) where development is the primary goal and biodiversity conservation is a secondary benefit. CBNRM projects encourage sustainable resource use and ecosystem management, and come out of the desire to see conservation 'pay its own way' (for more on CBNRM see Blaikie, 2006). These projects also attempt to give local people more of a stake in proceedings which makes social and economic sense to them.

In the centre of this continuum lie those projects which we perhaps think of more directly when considering community conservation projects – they are often smaller scale partnerships between local communities and private or state organisations. "These take many forms, but have the eclectic and evolving characteristics of contemporary development strategies that argue for 'pluralist', partnership and interorganisational approaches." (Adams and Hulme, 2001: 194) Such initiatives have been labelled in many different ways, for example integrated conservation and development projects (ICDPs), community conservation programmes, collaborative or joint management ventures (Adams, 2004). So dominant has this paradigm become that it would now be difficult to find a conservation project which is not in some way participatory or 'community based' (Berkes, 2004).

However, there are still many practising conservationists who argue that "exclusionary approaches are the most effective way to conserve habitats and protect biodiversity…

Many previous studies have suggested that if a park is not exclusionary then the success of that park is unlikely." (Southworth et al., 2006: 89/92) Criticisms of community conservation are based on the fact that "the results of community-based conservation experiments have been mixed at best." (Berkes, 2004:622) Of course this depends on who is evaluating the success, in whose interests or from which angle the evaluation is occurring. Berkes argues that the failure of community conservation occurs for one of two reasons – either that they should work but are being poorly implemented or that simply conservation and development do not work together. Adams and Hulme (2001) also offer critiques of the community conservation approach, arguing that the term 'community conservation' is often over-used and misunderstood. At best, they argue, community conservation allows a dialogue to open between development and conservation so that 'workable trade-offs' can be achieved.

Brown (2003: 89) concludes that "even so called 'new' conservation policy, practise and institutions remain expert-driven, undemocratic and autocratic" and states that although there is "evidence of a resurgent protection paradigm" the majority of commentators believe that "the new conservation paradigm, characterised by community conservation, is here to stay".

2.5 Multi-Spatial Geographies In The Focus And Future Of Conservation

"Critics suggest that Bruntland, and subsequent UN meetings, have only allowed the neoliberal economic agenda to increasingly co-opt environment and development thinking." (Gray and Moseley, 2005:10)

Conservation is a big money business in this global day and age. The value of the Worldwide Fund for Nature (WWF) rose from $25m in 1981 to $350m in 2001; the Nature Conservancy from $40m in 1985 to $300m in 2002; Conservation International, only established in 1987, had an annual budget of $92m in 2004; and the Wildlife Conservation Society (WCS) invested $40m in field operations alone in 2004. (Robinson, 2004:659) Protected area coverage in particular has increased with the expanding investment in community conservation projects as discussed previously. These are being "coordinated, financed, implemented and monitored through global organisations" including the UN, World Bank, IMF, and many International NGOs (Zimmerer, 2006:63).

Even with this amount of capital, ever increasing population pressures and environmental concerns combine to make it unsurprising that there is great debate over how to make the most of the implementation of these scarce resources. There are different priorities at different scales from global to local perspectives. In the early 1990s the IUCN aimed to protect a fixed 10% of each biome, however these targets were quickly criticised as being too arbitrary and "fail to account for the fact that regions of higher species richness and endemism may require higher representation targets." (Brooks et al., 2004: 616) Brooks et al., continue to argue that we need to analyse data at the species scale, that "spatial data on species are essential in conservation planning and cannot be disregarded or replaced by broad scale surrogates… many argue that the species is the fundamental unit of biodiversity" (Brooks et al., 2004: 617). The 'Key Biodiversity areas' approach implemented by a number of International NGOs prioritises areas of high biodiversity which hold viable populations of threatened, restricted range, and/or congregatory species. These areas are often in people dominated landscapes however, and new projects threaten to increase tensions between people and conservation management. Brooks et al. argue that these assessments are crucial however, that they are needed to focus conservation and that they can provide a "critical baseline for regional gap analyses that assess the

effectiveness of regional networks of protected areas and indicate priorities for expansion." (Brooks et al, 2004:617)

A major concern for conservationists, and of particular focus for biogeographers, is the 'islandisation' of parks (Southworth et al., 2006) As populations grow and people move into increasingly marginal areas, protected areas can become isolated. Much work is being done on the networking of these areas to provide corridors for the transfer of genetic diversity (Baydeck et al., 1999)

Some commentators have raised the question of whether there are already enough parks. They argue that we should concentrate on protecting those areas already designated and focus money on these spaces for successful long-term protection rather than continuing to spread limited resources out into increasingly degraded environments (Adams, 2004; Robinson, 2006) No matter what the spatial focus, it is clear that "institutions have to work across scales in both spatial and organisational or social terms. They have to link global and international interests with local needs and development priorities."(Brown, 2003: 91)

"Unless we develop a new conceptual framework for action, create the necessary institutional and policy frameworks and build human capacity, our successes will be limited and ephemeral." (Bawa, 2006:696)

The future of conservation is causing concern amongst academics and policy practitioners alike. Bawa (2006:696) argues that there are five interrelated challenges we need to meet for the future of conservation, "economic sustainability, institutional development, interdisciplinarity, capacity building, and large-scale action." He goes on to discuss each of these challenges in some depth building the convincing argument that the conservation of biodiversity needs to move beyond state-led interventions whilst highlighting that these will still remain an important area. Robinson (2006) too, offers thought on the new directions that the conservation should take: the need to reach scientific conclusions without full knowledge (ie the need to be able to make management decisions at a habitat or ecosystem level based solely on the evidence of one or two species which have been studied); the need to incorporate 'conservation values' in defining research goals , design and collection; the need to incorporate analyses from the social sciences and humanities to address conservation in a human

dominated landscape; and finally the need to continue to evaluate the contribution of conservation to human livelihoods."

Brown (2003) argues the need to listen to a plurality of voices to form a 'fusion knowledge' neither local nor traditional, but incorporating exisiting external scientific knowledge in a 'locally appropriate' adaptive management system. She urges a move beyond simple participation to create a decision making and planning institution which recognises and embraces social interactions and plural voices (Baydeck et al, 1999). We need to use 'deliberative inclusionary processes' in research including many qualitative methods such as focus groups, issue forums, "and various types of workshops and working groups. These methods typically put an emphasis on working with small groups of people; focusing on the future and on common ground; urging full attendance and participation; incorporating the widest possible range of interests; and seeking public commitments to action. (Brown, 2003:90)

Berkes (2004) calls for the emergence of a 'truly interdisciplinary conservation science' while Southworth et al (2006) argue that research for evaluation of protected area policies is practically non-existent whereas research for the selection of high-priority areas has improved quickly and dramatically. They state that the household is the key scale of analysis, but a holistic multi-scale approach is needed as conservation evaluation requires "the study of multiple, interacting factors occurring simultaneously, and often at different scales, within the landscape." (Southworth et al., 2006: 93) They exhort the use of place based case studies "undertaken at the local scale [understanding] the linkage of the human-environmental system such that it is studied as a single, coupled system." (Southworth et al., 2006: 93) There is also a strong call to analyse the impacts of parks on people and people on parks. This is an extremely complex relationship which needs further investigation (Redford et al, 2006). Indeed, "there remains a need for empirical studies to understand under what conditions and over what spatial scales people's livelihoods can be enhanced and wild species conserved." (Robinson, 2006:665)

Geographers are in the ideal position to play an important role in conservation policy direction and management at the interdisciplinary edge, understanding both quantitative and qualitative research methods (Gray and Moseley, 2005; Robinson, 2006; Southworth et al, 2006) Robinson complains that currently too "few articles integrate

the approaches of both the natural and social sciences… even as we have repeated the mantra that conservation is really about people, not about plants and animals" (Robinson, 2006:662). Geographers are in the valuable position situated on the frontier nature/society debates and have access to expertise in remote sensing and GIS technologies which are crucial in the representation of conservation management. A long tradition of field based work, especially in the developing world, and a "prodigious amount of scholarship regarding factors influencing natural resource management and human-environment interactions." (Gray and Moseley, 2005:10)

2.6 Conclusions

"This is not an esoteric debate, but one with fundamental importance that affects real world policy and programmes." (Gray and Mosely, 2005:10)

The Geographies of Conservation are a rapidly expanding field in which "very serious issues such as economic and cultural globalisation and global environmental change provide the backdrop against which resilient and adaptive policy will evolve." (Brown, 2003:91) In recent history conservation policy has changed and is now no longer focussed simply on protecting large swathes of land. A more nuanced approach involving the incorporation of local peoples into management plans has come to the fore and is now the dominant paradigm in protected area administration. As Non-Governmental Organisations continue to recruit more donating sponsors in the developed world, more money is available to fund projects which increase the percentage of the earth covered in protected areas. These increases will continue to cause conflict and tension as protected areas encroach further and further into people dominated landscapes. At present, while most conservation organisations have participatory development goals as an integral part of their plans, little is being done to quantify whether these goals are successful – either for the people they are meant to be helping, or for the habitat being protected.

Protected area landscapes are often, and increasingly, characterised by biological and socio-economic dilemmas, and there is continued need for carefully managed, fully integrated, interdisciplinary management. It is necessary to not simply include community based objectives in conservation management plans as an aside, to tick the

correct boxes on funding applications. Instead, a plurality of voices needs to be incorporated throughout to truly understand and to be able to aim scarce resources at those areas where they are most needed. It is necessary to include the views of the local populations involved, to educate and inspire about the importance of environmental protection on both local and global scales. The views of natural scientists need to be incorporated as to what areas need conservation priority, and the views of social scientists, especially development practitioners with experience in the field, for understanding of achievable, useful and, importantly, quantifiable goals. There needs to be an exchange of knowledge: the conversation must be started and it must be open if the Community Conservation paradigm is going to be a success.

Chapter 3 - Methodology & Methods

3.1 Study Site

Research was carried out in the community of San Jose de Payamino around 4 hours up the Rio Payamino by motorised canoe from the large town of Coca. The Payamino territory is a 60,000 hectare area of primary lowland rainforest situated in the foothills of the Sumaco Volcano, east of the Andes. Politically, Payamino territory is in Province – Orellana; Canton – Loreto; Parroquia - San Jose de Payamino.

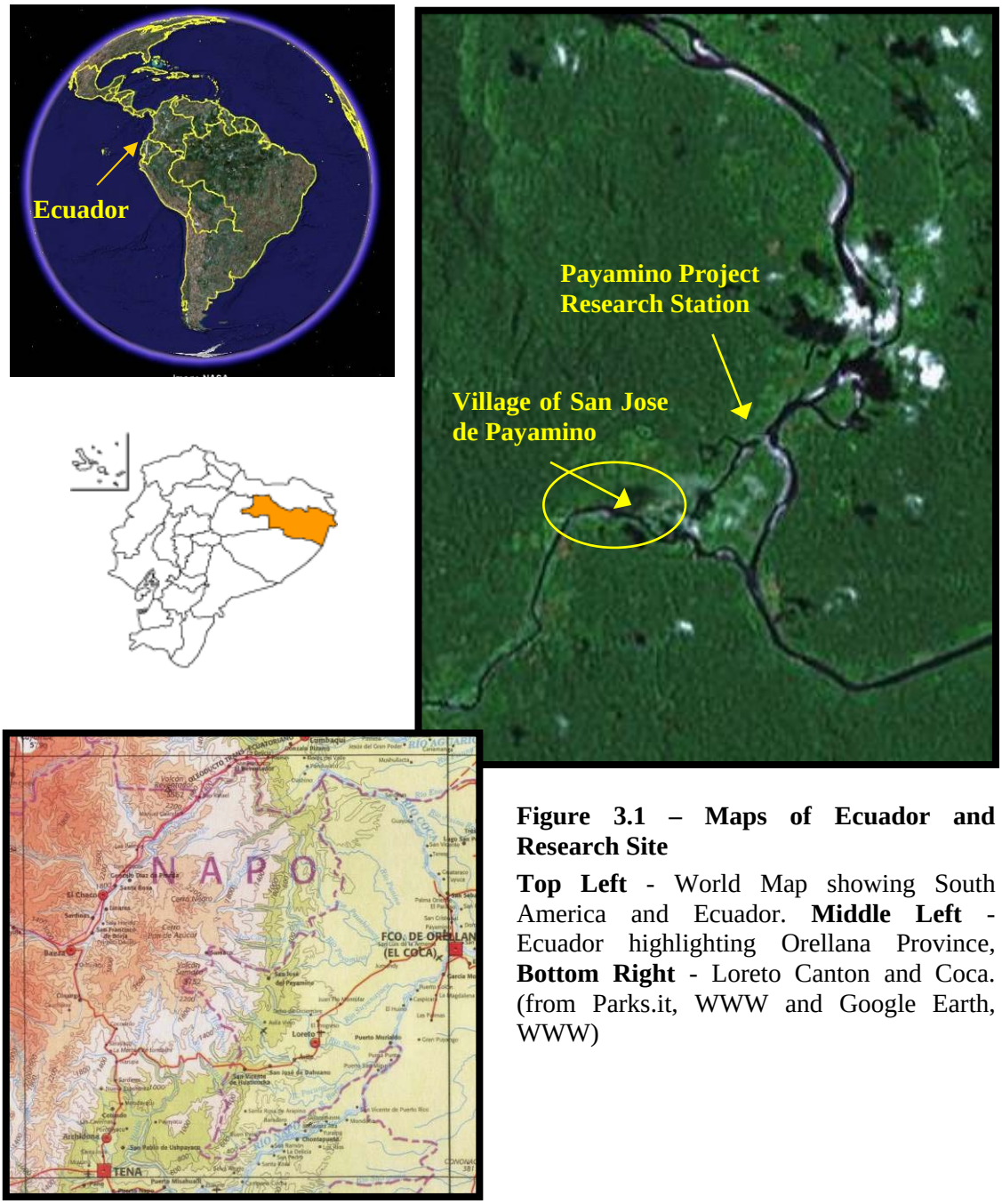


Figure 3.1 – Maps of Ecuador and Research Site

Top Left - World Map showing South America and Ecuador. **Middle Left** - Ecuador highlighting Orellana Province, **Bottom Right** - Loreto Canton and Coca. (from Parks.it, WWW and Google Earth, WWW)

3.2 On Methods and Methodology

It is useful to consider the following diagram taken from Del Casino et al (2000) when attempting to understand the intrinsic order underlying the research process from beginning to end. At the start of the research process must be the epistemological and ontological decisions – those beliefs which underpin our research asking what knowledge is, how it is produced, what is there to be researched and why should we research it? (Johnson & Sidaway, 2004)

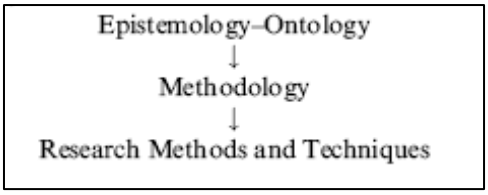


Figure 3.2 – Intrinsic Order Underlying the Research Process

Following this 'meta-theoretical' underpinning, the methodology can be described as the 'meso-level' narrative (Del Casino et al, 2000). This 'meso-level' methodology is our overall approach to the research design – the definition and selection of objects of analysis, the forming of research questions. It also "involves assessments of reliability, validity, reflexivity, and research ethics" (ibid). Methodology requires the transformation of our epistemological/ontological precepts into data which can be analysed. These methodologies have taken a number of forms over the past 50 years of Geographical research but three main groupings can be (not un-problematically – there are many more –isms which could be included (Johnson & Sidaway, 2004) mapped as in Del Casino et al (2000).

- Spatial Science – 1950's onwards – positivist, empirical scientific approach where "the truth or falsity of theories is underdetermined by empirical data" (Sarre, 1987).
- Critical Realism – 1970's onwards – Marxist underpinning challenging the order of power relations to "explain the underlying structures and mechanisms of the capitalist mode of production" (Sarre, 1987).
- Postmodernism – 1990's onwards – perspectives which celebrate the diversity of life seeking to break traditional binary approaches by understanding

textuality, complexity and attempting to shift the viewpoint away from "the North as the primary location of knowledge and power" (Bell, 2002).

Each of these approaches have very different specific methods which will be of use and these are very much linked to our methodology. Methods are the particular techniques used to collect the data whether qualitative or quantitative, extensive or intensive, field or lab based. The following table (Figure 3.2) gives an overview of these three methodologies and their resulting methods (from Sayer, 1992, Sarre, 1987, Briggs&Sharp, 2006, Peet, 1998)

The level of analysis included in the table is important as again this is a good indicator of methodology. Extensive analysis tends to look for broad patterns throughout a particular area, looking for similarities or differences. Largely quantitative, extensive research aims to produce broad theories for a whole population which are unlikely to be applicable to any individual (the problem of ecological fallacy). Intensive research on the other hand looks in more depth at one particular case or place. It is concerned with what the 'agents' actually do and while in-depth patterns and relations can be seen it is unlikely to be representative or generalisable (Sayer, 1998).

Methodology	Object of Analysis	Level of Analysis	Methods
Spatial Science	Spatial variation. **Mapping.**	Extensive	Large scale formal standardised survey (often secondary data). Statistical analysis. Mapping (GIS).
Critical Realist	Socio-econonic power relations. **Contextualising.**	Intensive	Abstract research (considers structures and mechanisms) and concrete research (explains particular situations and events.) Often interview based.
Postmodern	Texts, identities, individualaties. **Deconstructing.**	Intensive	Textual, image and performance analysis. Imagined accounts concerning agency. Participant observation, unstructured interviews and focus groups.

Table 3.1 – An Overview of Three Methodologies and their Resulting Methods (from Sayer, 1992, Sarre, 1987, Briggs&Sharp, 2006, Peet, 1998, Del Casino et al., 2000)

The underlying methodology to my research is (as it could be argued it is for most) placed somewhere cross-and-inter these boundaries. The work I am doing is intensive in scope and involves a great deal of participant observation, while also including aspects of concrete research – attempting to explain and evaluate particular situations or events through structured and semi-structured interviews. My approach lies somewhere between realism and post-modernism, looking to both deconstruct the processes and contextualise them in a wider frame, attempting to empower those people I am working with.

3.3 Positioning Myself in the Research Process

Ultimately I want my research to be of use - to add weight to the argument for long term protection of this forest habitat and community. I am here in the Payamino to work for the Payamino Project and will continue to live and work here for a further 8 months after this thesis is complete. This means I undoubtedly come to the research process with a biased attitude, hoping to find things going well and attempting to put them right if not. I am aware of this though, and throughout have tried, as much as is possible, to keep an objective approach, to be critical of the process when needed.

As well as this, as a researcher in any situation I need to conceptualise myself and position myself as part of the research process, especially when using the methods discussed below. I have to be "both *active* and *reflexive* in process of data collection" (Mason, 2002:65) as I need to be aware that in some cases people will be telling me what they think I, or the Project, want to hear, rather than telling me what they really feel. Also, there will undoubtedly be things I want to hear, ways my coding will reflect the issues I am looking for again, rather than necessarily picking up on what is actually being said.

With that in mind, my position in relation to those I have been working with and re-presenting is important in understanding the knowledges I have produced. It is important to understand that this is not, and has not been, a clear process – that fieldwork is messy and complicated (Ezeh, 2003, Nilan, 2002) and has been so here as much as anywhere, with problems and benefits of living and working in a remote area of the developing world (see Chapter 3.7). It has been my aim to produce work which

is ultimately of use to the Payamino Project and community, and eventually this comes down to my own personal ethics (as will be discussed in Chapter 3.5). I believe that the only course of action in this situation is one of uncompromising critical support, being authentic, supportive and honest with all of those involved in the research process. This means putting myself in the position of writing things which the project management may not like to hear, but which I feel it is necessary to help shape the future for the Payamino community and forest.

3.4 Justification of the Payamino Project as a Case Study

"Case studies involve studying a phenomenon within its real-life setting" (Kitchen & Tate, 2000:225) and as such the Payamino Project is an ideal case study to investigate to query the role and impact of community conservation projects. The project is currently half way through the initial ten year agreement between the community of San Jose de Payamino and Aalborg Zoo, the Universities of Glasgow, Manchester and Arnhus.

This is an area of unparalleled natural resource and the project is a typical example of a 'Community Conservation' project, aiming to both protect the forest and the community at the same time. We have been invited to work with the Project and community directly as a further effort to continue open dialogue to make sure that this project continues to work to protect both the environment and local way of life.

Importantly the Payamino Project, territory and community are of interest as the Payamino Territory overlaps and co-exists with a variety of other designated areas and management zones as will be discussed in detail in Chapter 4.

3.5 Detailed Description of Data Collection Techniques

Using the case study approach rarely are methods used individually – rather the issue can be approached from a number of different angles allowing the "issue to be studied in depth and from a variety of perspectives… No one data generation method is used and quite commonly a number of techniques are employed. (Kitchen & Tate 2000: 225)

Before departure into the field a number of secondary sources were used to provide the theoretical background to the issues in conservation management. Journal articles, academic books, websites and Government and NGO publications and statistics (in both Spanish and English) were employed to both provide important data and to influence the direction of my research.

3.5.1 Participant Observation (Participation)

"In participant observation the researcher seeks to observe events and the behaviour of people by taking part in the activity themselves." (Kitchen & Tate, 2000:221) and this is the role I have taken. I have been working day-to-day with guides and members of the community, teaching a little, learning a lot. Over the past three and a half months there have been three different groups from Europe in the Payamino all of which work primarily through the Payamino Project Ecuadorian Co-ordinator. It has been useful to work with each of these groups, with different guides and ideas, and to see how the community and research aspects of the Project interact at first hand. Working this closely with the community, I have been welcomed not simply as an academic researcher sent to extract knowledge but as someone who can help with those areas the community wish to learn such as teaching English, accounting and report writing.

It has been argued that "Observation is the only methodology available to study what people actually do rather than what they say they may do." (Kitchen & Tate, 2000:224) however there are problems too with this approach too – after all, can deeper meanings be attached to overt behaviour? What is the effect of the researcher upon the researched – especially in overt observation? If a deep level of trust is not built up quickly, this can lead to distrust and marginalisation of the researcher (Lindsay, 1997). Also, we cannot help but observe from our own position – looking for our own answers, not necessarily an objective interpretation of events. "There is no such thing as 'just observing'. A lens can have a focus and a periphery but it must be pointed somewhere" (Kitchen & Tate, 2000:224) – an issue they go on to describe as 'selective attention' as well as 'selective encoding'. Flowerdew & Martin (2005) suggest it is important to keep field notes throughout the study period to produce a written guide to thoughts throughout the research process and also to provide room for

reflection both during and post the field season. An example of an end of day note taken is provided in Figure 3.3 below.

10th August

First day of interviews today. Spent the morning finishing the slides I want to show, questions etc then grabbed Richard at about 12 and then Andrew after lunch. Both lasted about 35mins. Really interesting and I actually quite enjoyed doing it which surprised me. Thought it would be uncomfortable but they were both eager to chat and had no problems with any of the questions, even those I'd thought might be a bit touchy. Neither of them said anything hugely astounding but both had some good sound bites and both expressed a general feeling of unease at the moment, especially a lack of knowledge about where the cash is going. The diagram question worked really well and they both highlighted Darwin's gatekeeper effect, but little real idea of real possible realisable steps to make this better – apart from us of course! No pressure!

Chilled in the afternoon, there's not much for us to do at the moment because the Manchester students are busy writing up their projects. Had more chat with Andrew and Anna about the project and how difficult it is, whether the community really care or not and indeed does it really matter? The issue of communication keeps coming up. The community need to know what's happening and, importantly, why. Started to transcribe Richards interview tonight. It's going to be a long process! I managed to do about 10mins of it in an hour or so (about 1400 words!!!) Anna's off out frogging with Andrew so time for some Family Guy on the iPod before bed! Life's little luxuries! Manchester's last day tomorrow so we'll be heading into the village for a fiesta and a game of football, Gringos vs Locals! Should be interesting!

Figure 3.4 – Example of field notes, 10th August 07

I am not only participating with community however, but also with the Payamino Project management. Indeed, much of my preliminary research and the introduction of myself to the project steering group came at their annual meeting in Aalborg, Denmark in February 2007. Again I have to be careful as to how I position myself with the project management as they are in essence my employer for the next year, and will be providing references etc. when I get back to the UK. While I do want to be doing research which is useful for the project it will be, and indeed has been, necessary to ask difficult and uncomfortable questions at times, especially about the financial side of the project. To deal with issues of this kind, Flowerdew & Martin (2005) offer a guide to involving participants at every stage of the project from design to data collection to analysis to writing up to dissemination and particularly through the reciprocal exchange of knowledge. This has been possible with the project management, they have always been aware of my goals and have been very

supportive of these throughout. All of the management steering group have been willing and open in interviews, as discussed below, have offered advice and direction and all of the outputs of this work will be distributed to them for comments and reactions.

3.5.2 Interviews

Whilst "interviews are one of the most commonly recognised forms of qualitative research method" (Mason, 2002:63), they are also one of the most complex. It may be easy to believe that interviewing a participant is a straightforward process, in fact it is one which is a minefield littered with possible downfalls. For my research it has been necessary to conduct interviews with key stakeholders in the management team and in the local community.

The first decision to be made is that of interview-form. Should this be a rigidly structured questionnaire or a number of open conversations? We may use qualitative interviews to understand the complexity of an individual situation rather than questionnaires which would gain broad understanding of surface processes. (Seidman, 1998) Both have their advantages (questionnaires provide consistent data throughout the collection process; conversations may provide a clearer more 'true' and natural version of events) and disadvantages (Structured interviews / questionnaires heavily bias the results as they can only answer the questions you ask; conversations can too easily lose track of the questions needing answered) (Lindsay, 1997, Mason, 2002).

For my purposes, it will be necessary to utilise both of these options, however the majority of interviews will be semi-structured - designed to allow flexible conversation to flow without losing focus. "Even in the most informal and unstructured interviews, the researcher is likely to have identified a broad agenda of topics or themes to explore" (Ritchie & Lewis, 2003:115). Production of a topic guide and field notes will help with this aspect (for one interview guide used with the Payamino Project Ecuadorian Project Co-ordinator see Appendix A). Mason (2002) suggests that an interview plan should start with two or three 'big' questions which can then each be unpacked into specific questions to be referred to throughout the

interview and this was kept in mind when designing the interviews for each interviewee.

A semi-structured format allowed different interviewees to be asked different questions to draw out similar themes and to consider the different reactions of management and local community members. Because each interviewee is different and needs approached differently "good qualitative interviewing is hard, creative active work… Analytical comparisons in your data set will certainly not depend upon having asked all interviewees the same set of questions… you may well need to ask different questions of different interviewees – precisely so that you can generate situated knowledge." (Mason 2002:65)

There are problems with such an interview technique also however. Not only does it require great skill on the part of the interviewer to be "not only an empathetic listener but a good conversationalist" (Eyles & Smith, 1988) keeping respondents comfortable when asking potentially difficult questions, but also there are theoretical difficulties, after all interviews are just as socially situated as any other interaction and so issues of positioning and objectivity are just as important here as they are when considering participant observation (Mason, 2002). The interaction between researcher and researched is important and hence semi-structured interviews are good as they allow an exchange of knowledges and ideas.

Seven interviews were carried out – the Payamino Project co-ordinators (see e-interviews below), three members of the project steering group who were conducting biological research, running field courses or expeditions in the Payamino over the summer months, the Ecuadorian Project Co-ordinator, an employee of the Parque Nacional Sumaco Napo-Galeras and a member of the Payamino community. For those interviews with the three members of the steering group a set of four slides (see Figure 3.3 below) was used to illustrate points or to provide examples. Every interviewee was asked both oral questions and also asked to draw diagrams at various points. Interviews lasted between 30 and 40 minutes and transcribed at between 3,800 and 5,200 words. Those interviews conducted in Spanish were not recorded or transcribed as this process would have been too difficult. Alongside this many

informal conversations were had with guides, members of the community and also with all of those interviewed.

Interviews were then coded using a trial-and-error method (as recommended by Sharp, pers comm.) A coding sheet was structured with the main themes I was hoping or expecting to find. Within these themes a number of options as to how this theme may be expressed were included and each theme was given a different colour. Printed transcriptions were read through a number of times and underlined with the appropriate colour.

Figure 3.3 – Example of the Slides Used During Interviews

3.5.3 e-interviews

Due to the location of the Payamino Project management in Denmark it was necessary to use an e-interview to garner their opinions and views. Because of living so remotely it was not possible for this to be an online conversation (time differences between countries and lack of time in Coca, the nearest town with internet) which would have allowed for some two-way conversation. Instead a rigidly structured interview was emailed to which they had a month to reply. This has its own problems - it gives the respondent time to think and consider the 'correct' answer to questions for example, however in this case it was the only option, and as the interview was with the project co-ordinators and instigators hopefully this should not be too much of an issue as it is they who have the most to gain from an open consultation and review, and they who have been extremely supportive and welcoming.

3.5.4 Questionnaires

I also decided to create a short questionnaire for the community (see Appendix B). Because the community is very large, this seemed to be the best way to sample a larger proportion of community members across the social and cultural divide. While I managed to conduct one formal interview with a 30 year old male member of the community and many open conversations with other members of the community, including the President and project workers, because of the limitations of my own Spanish and reluctance to use an interpreter (see Chapter 3.7.1) It also allowed me to reach a wider proportion of the community than may have been possible without. The majority of questionnaires were completed after a political meeting in the village where the villagers were asked if they would like to complete one. Many of the females present did not wish to partake even when presented with the questionnaires by my female co-workers. Altogether 26 questionnaires were completed, 5 by women and 21 by men, age ranged from 16 to 60.

3.6 Ethical and Power Considerations

"Fieldwork in the Third World can give rise to a plethora of ethical dilemmas, many of which relate to power gradients between the researcher and researched. Combined with this are complex issues of knowledge generation, ownership and exploitation." (Scheyvens & Storey, 2003:139)

It is becoming increasingly important to consider the role of ethics when designing a research proposal. Not only do we have to contend with faculty ethics codes (see Ethics Form pg 3) but there are deeper questions of personal ethics which have to be considered also. It is implicit in everything I am doing that community participation is at the centre of my research. The aim of this study is to contribute to this community conservation project, to make sure that what is happening is what the local community want to be happening. This being true, there are still a number of ethical issues which have to be considered.

3.6.1 Informed Consent, Anonymity and Confidentiality

"Informed consent is when a potential participant freely and with full understanding of the research agrees to be part of the project." (Scheyvens & Storey, 2003:142) This has not been a problem for my research. As we have been invited to work with the project, the local community and NGO management should all be aware of my research projects.

All of the interviewees have read and signed an interview consent form which outlines the aims of the research and details their rights of anonymity, to decline, withdraw etc. (consent form pg 7; see Sheyvens & Storey, 2003:143). The researcher also has the responsibility to ensure that respondents understand their right to anonymity and to grant this in all documents produced, if requested, or if disclosure could cause future harm to the participant (Kitchen & Tate, 2000). In this case none of my interviewees requested anonymity at any stage. I also have the responsibility to ensure that "any fieldnotes, tapes or transcripts will be stored in a safe place and that information contained in them is used only for the purposes of the research." (Scheyvens & Storey, 2003:146)

The majority of the community questionnaires were carried out after a community meeting, I explained their purpose to the community President who then explained to the participants and translated the questions from Spanish into Kichewa. All the questionnaires were conducted anonymously and there is no way the data could be traced back to individuals.

3.6.2 Power, Conflicts of Interest and Reciprocity

Interviewing both Project management in Europe and on-site, and living within a small community power relations have been an important aspect of the research process for me. With the management team (which includes a former lecturer of mine in the Division of Evolutionary and Environmental Biology) I was lucky that there were no problems. Each interviewee treated me with the same respect with which I treated them; hopefully realising I have experience in this environment and having

nothing to hide. In the community however, a very different power relationship was present. Community members seemed very aware that I was working for the project and for the most part, especially when filling in the questionnaire, wanted me to know that they were happy with having the project to work with. Apart from a few outspoken men, they seemed reluctant to complain or to ask for anything different, perhaps fearing that if they were to complain the project would leave and they would be worse off.

There may be also be ethical dilemmas which come about through conflicts of interest – I have been invited to work in this project and by questioning the management I could find myself in a difficult ethical position if I find things which I disagree with or which are critical of the management style. Do I have an obligation to the management to tell them or to bury my findings in case this impacts on future funding and relationships? (Faust & Nagar, 2003) As mentioned previously, I believe that the only course in this situation is one of uncompromising critical support, being authentic, supportive and honest with all of those involved in the research process.

Ethics need to be relational and contextualised, a product of reciprocity between researcher and researched which is negotiated in practise. In my case there has not needed to be an 'ethics of deception' as my research has been overt – a process of open consultation rather than one of covert criticality (Routledge, 2002). My fieldwork required sensitivity to relational differences (eg race, gender, age), however, and to be honest this was very difficult to overcome. While I had always intended to "recognise the centrality of collaboration between stakeholders and researchers in all stages of the research process from formulating the research agenda on through fieldwork, analysis, dissemination and evaluation" (Faust & Nagar, 2003: 78) it was very difficult to access the opinions of some sections of the community as discussed below.

3.7 Difficulties of Fieldwork in the Developing World

"Research can, and ultimately should, be empowering for both the fieldworker and participants." (Scheyvens & Storey, 2003: 237)

There are many differences which make working in a country three thousand miles from home difficult. Apart from the obvious emotions of missing family and friends at home (and I am very lucky in this respect that my fiancée is working here with me) and having to get used to a completely different lifestyle and timescale in the tropics, not to mention the climatic differences. There are however three issues in critical areas which I have encountered over the past three months and which merit short discussion.

3.7.1 The Issue of Language - To Use An Interpreter?

I was always aware that language was going to be a problem for me working in South America. Before coming to Ecuador I enrolled on a Spanish Language evening course but this was woefully inadequate. After the first 5 weeks in the field it was plain to see that a more intensive course was needed if it was going to be possible to interview people and just generally live and work here. We took a short break from the forest to Quito where we undertook an intensive 8-day course which was fantastic. Still though, whilst I can now get by in Spanish, and converse if people speak slowly and clearly, I am still not near fluent. There is also the fact that some of the community of San Jose de Payamino do not even speak Spanish, especially the older members of the community, as they speak a unique dialect of Kichwa (a widespread indigenous language in the Amazon and Andes). This then brings forward issues of whether to employ a local translator (see Scheyvens & Storey, 2003: chapter 8) which needed to be thought through in great detail. I had initially thought that this would be a useful and important tool for me, but the only option for me was to use the Payamino Project Ecuadorian Co-ordinator and this would have lead to increased problems of having a 'gatekeeper' (Cook & Crang, 1995) who may influence data collection outwith my control. As this had already been seen to be a problem with the Project at present (see Chapter 6.3) I decided to go it alone. I conducted two interviews solely in Spanish and created a questionnaire for community members. The interviews worked well, they took longer than would be expected if I was fluent but it was important to make sure

that all points were correctly understood and the two men interviewed were very patient with me for which I offer my sincere thanks.

3.7.2 Access to Resources

Access to resources was a problem, especially during the writing-up stage of this work. Living and working in the community meant electricity was extremely hard to get to use the computer. A generator (owned by the National Park) was available at some times when the Park Guard was in the village. Also, the Payamino Project have solar power at their Research Station which is a 30 minute walk from the main village where we have been living. This walk also includes crossing a 35m wide river which varied, depending on the amount of rain during the night, from being walkable at chest height or totally impassable. So great was the need for electricity however we did brave this river twice, having to build a raft to carry the computer (a risky enterprise!) and swimming across. Only being able to access the internet once every two weeks was also problematic for consultation with supervisors and when in need of specific journals or books. Much of the planning for this work had to be carried out prior to the field period to make the investigation and write up as smooth as possible.

3.7.3 Cultural Differences

There is no getting away from the fact that the community of San Jose de Payamino are very different culturally. On meeting them for the first time they are very shy, almost unwilling to be drawn into conversation. For me, as a white male, it was especially difficult to meet with and talk to the women in the community, and even when approached by my female co-workers they were very wary of talking to us. Although over the past 10 years there have been many white tourists in the area, we are the first foreigners to ever live in the Payamino territory. They are an apparently very happy people, there is always a great deal of laughing (especially at our Spanish!) and as we lived with them over the weeks they became more open and willing to converse, but still the women would not want to talk to me, and even when teaching English classes in the school, female students were always reluctant to speak.

Chapter 4 – Protected Area Management in Ecuador

4.1 Sistema Nacional de Áreas Protegidas (SNAP)

Proportionally to its size, Ecuador is the country with the highest biodiversity in the world and Ecuador is rightly proud of its biological diversity and heritage. The Ministerio del Ambiente de Ecuador (MAE) runs the Sistema Nacional de Áreas Protegidas (SNAP) – a series of twenty six protected areas throughout the country (see Figure 4.1 below) which include a number of different habitats and ecostystems and includes the Galapagos National Park and Marine Reserve and one cross boundary national park, El Condor, formed due to a peace agreement between Ecuador and Peru (SNAP, 2006; Parks.it, WWW). These protected areas are extremely important to the Ecuadorian economy and to the Ecuadorian people for which there are a number of reasons discussed below.

Figure 4.1 – Map of Sistema Nacional de Áreas Protegidas

(from Exploring Ecuador, WWW)

"Your decision to support conserving our biodiversity, sources of water, sources of hydroelectric energy, tourist destinations and cultural heritage will allow future generations to live in an Ecuador as beautiful as we have now." (translated from SNAP, 2007:1)

Apart from the ethical and moral arguments for the conservation of biodiversity there are four more pragmatic reasons the Ecuadorian Government is keen to protect large proportions of its natural environment. Firstly, 4.5 million Ecuadorians who live in the main cities of Quito and Guayaquil depend on water that originates in protected areas: over 70% of the water that is consumed in Quito comes from the protected areas of Cotopaxi, Antisana and Cayambe Coca. Secondly, hydroelectric plants which provide 60% of the total energy requirements of the country are placed inside protected areas. (SNAP, 2006)

Thirdly, the Ecuadorian Government has been able to take advantage of Debt-for-Nature schemes offered by WWF and the Nature Conservancy. In 1989 they agreed a deal to write off $10million of Ecuador's national debt in return for the amount to be invested in protected area management throughout the country (Poverty & Conservation, WWW).

Finally, and perhaps most importantly, the protected area system in Ecuador attracts 42% of all tourists to the country, particularly high value tourists to the Galapagos Islands. Tourism is the fourth largest source of income in the country and represents an extremely important revenue generating income. Additionally figures show that 68% of visitors to SNAP continental (not including the Galapagos) were nationals which is seen as a very positive indication that the national people are proud of their natural and cultural heritage (SNAP, 2006).

4.2 Protected Area Designations in Ecuador

As shown in Table 4.1 there are a number of different designations associated with SNAPs protected area management in Ecuador. Protected area designations come from two national decrees – the 1971 National Parks and Reserves Law (Ley de Parques Nacionales y Reservas, Decree No. 1306) and the 1981 Law of Forestry and the Conservation of Natural Areas and Wildlife (Ley Forestal y de Conservación de

Areas Naturales y Vida Silvestre, No. 74) (IUCN, 1992). These laws set out the basic management goals of Ecuador's national commitment to protecting its biological diversity. All twenty six areas are listed in their correct category in table 4.1 below. There is also a strong correlation between the differing names used, legal descriptions and IUCN category designation as shown in Table 4.2.

Problems arise over the definitions of management categories given in the 1981 Law. No clear distinction is made between the designations of National Park and Ecological Reserve, which gives rise to conflict over their management and a number of areas named presently have no legal basis (IUCN, 1992). As can be seen from Table 4.2 below, although their description is very similar in law, their management categories, II and VI respectively, vary greatly. Alongside these problems, these laws were overridden by other sectors: state-aided colonisation and migration, together with mineral exploitation, have been encouraged, particularly in forested areas (IUCN, 1992) These decrees have been updated and tightened over time and in 1999 the current Ministerio del Ambiente de Ecuador was created specifically to manage the countries natural resources (MAE, WWW).

	Protected Area	Size (hectares)	IUCN Category	Designated
1	Cajas National Park	28,808	II	June 1977
2	Cotopaxi National Park	33,393	II	August 1975
3	Galapagos National Park	799,540	II	August 1959
4	Llanganates National Park	219,707	II	January 1996
5	Machalilla National Park	75,059	II	August 1979
6	Podocarpus National Park	146,280	II	December 1982
7	Sangay National Park	517,725	II	June 1975
8	Sumaco Napo Galeras National Park	205,249	II	March 1994
9	Yasuní National Park	982,300	II	July 1979
10	Limoncocha Biological Reserve	4,613	1a	October 1985
11	Galapagos Marine Biological Reserve	13,300,000	VI	November 1996
12	Antisana Ecological Reserve	120,000	VI	July 1993
13	El Angel Ecological Reserve	15,715	1a	August 1992
14	Cayambe Coca Ecological Reserve	403,103	VI	November 1970
15	Cayapas - Mataje Ecological Reserve	51,300	VI	October 1995
16	Cotacachi - Cayapas Ecological Reserve	204,420	VI	September 1968
17	Los Ilinizas Ecological Reserve	149,900	VI	December 1996
18	Mache Chindul Ecological Reserve	119,172	VI	August 1996
19	Manglares Churute Ecological Reserve	49,400	VI	September 1979
20	Pululahua Geobotanical Reserve	3,383	III	January 1966
21	Cuyabeno Wildlife Reserve	603,380	VI	July 1997
22	Chimborazo Wildlife Reserve	58,560	VI	October 1987
23	Pasochoa Wildlife Refuge	500	1b	December 1996
24	El Boliche Recreation Area	400	V	November 1979
25	Isla Santa Clara Wildlife Refuge	46	1b	June 1999
26	El Cóndor Bi-National Park	130,000	II	August 2001

Table 4.1 – The Twenty-six SNAP Areas

(compiled with data from Exploring Ecuador, WWW; MAE, WWW; SNAP, 2006; WDPA, WWW)

Designation	Description	Number in Ecuador	IUCN category
National Park	An area extending over a minimum of 10,000ha, with one or more ecosystem remaining in its natural state and possessing ecological diversity, floral or faunal species or geological formations of national, scientific and educational importance. Visitors are permitted entry solely for educational, recreational or investigative purpose.	9	II
Biological Reserve	An area of any size, whose ecosystem remains in its natural condition and is set aside for wildlife conservation.	1	Ia
Marine Biological Reserve	An area of any size, whose ecosystem remains in its natural condition and is set aside for wildlife conservation.	1	VI
Ecological Reserve	An area extending over a minimum of 10,000ha, with wild floral or faunal species of national importance, particularly those in danger of extinction, or geological formations or natural areas of national interest. Natural resources are to be maintained in their natural state. Exploitation or occupation of any type is prohibited. Only educational, research and recreational activities are permitted.	8	VI
Geobotanical Reserve	No definition available	1	III
Wildlife Reserve	No definition available	2	VI
Wildlife Refuge	An area of any size, essential for ensuring the continued existence of resident or migratory wildlife, for scientific, educational or recreational purpose.	2	Ib
National Recreation Areas	An area of no less than 1,000ha in size, which contains scenic, tourist or recreational attractions in their natural state. The area must have easy public access.	1	V
Bi-national Park	No definition available	1	II

Table 4.2 – Ecuadorian Protected Area Designations with Definitions

(from IUCN 1992, WDPA, WWW)

4.3 The Future of Ecuador's Protected Area Network

Assessments of the protected area coverage indicate that the current system has serious gaps in coverage, and does not provide adequate protection for representative examples of native flora and fauna. Five of Ecuador's 25 'life zones' are not represented in protected areas (IUCN, 1992). The most under-represented of all regions is the coastal plain, with only three protected areas. The mangroves and reefs found in this region are vital to the prevention of coastal erosion and are severely under-represented. Lack of funds, however, seriously restricts implementation of the system (IUCN, 1992).

In 2006 SNAP, in conjunction with over 200 conservation professionals from various national and international agencies, produced an "Análisis de las necesidades de financiamiento del Sistema Nacional de Áreas Naturales Protegidas del Ecuador" providing data on current levels of expenditure on protected area management and two possible future scenarios. In 2003 the budget of SNAP was comprised as follows: 35% from public resources; 31% through self-financing (selling tourist permits, visitor tariffs); 15% through contributions from national and international non-governmental organisations; 10% from the National Environment Fund and 9% through agreements with private enterprises. In 2003 $8,718,650 was invested in SNAP. This is the equivalent of only 0.05% of the national budget. 70% of this amount went directly to the Galapagos National Park and Marine Biological Reserve. This is explained by the fact that the Galapagos attracts far higher visitor numbers and generates 2.8 times as much income as the whole of SNAP continental combined.

Of the $2,705,788 destined for SNAP continental in 2003 a mere $215,741 was spent on investment while the remaining $2.5million covers personnel (46%), maintenance and operating costs. "Of every dollar that is invested in SNAP continental, 42 centavos are destined to cover indirect costs of protected area management" (translated from SNAP, 2006: 6) These results demonstrate that SNAP hasn't improved its financial situation in relation to 1998, the only year with comparable data. Furthermore, they notice an increase in the deficit of key resources such as personnel, modes of transport and equipment. While the protected areas have expanded, resources have not.

They offer estimates of the financial input needed under two different scenarios. The 'basic' package simply covers the costs of administration, control and care of existing areas and participatory planning. The 'integral' package involves "an extended range of activities which guarantees the fulfilment of the objectives of the protected areas in the long term" (translated from SNAP, 2006:5). This involves those areas covered in the 'basic' package as well as investment in community development and environmental education; Tourism and recreation; and Investigation, management of natural resources and environmental monitoring. To carry out the 'basic' plan they recommend an investment of $6,293,455 or for the 'integral' $12, 211,681. These figures do not include the Galapagos, which, as they are so internationally important, require specialist intensive management which they recommend at a value of a further $24,367,090 (SNAP, 2006; MAE, WWW)

It is difficult to know how much further investment will be needed in the large areas of privately protected land throughout the country, and indeed difficult to quantify how many other projects are continuing through international NGOs at present. Alongside SNAP and private partnerships, as discussed in Chapter 2.3, UNESCO Man-and-the-Biosphere reserves also cover vast areas of the planet. In Ecuador there are three Biosphere Reserves covering 17,375,000 hectares (two land and one vast marine reserve) and encompassing some of the countries finest natural habitats (Earthtrends, 2003, WWW). The Payamino territory lies at the heart of one of these – the Reserva de Biosfera Sumaco.

4.4 Reserva de Biosfera Sumaco & Parque Nacional de Sumaco Napo-Galeras

Reserva de Biosfera Sumaco was officially declared in November 2000 as a 996,934 hectare zone "of great cultural and natural value where one looks to improve the management of natural resources and improve the conditions of life of the local population" (translated from CORBS, 2004). This zone lies in three provinces – Orellana, Napo and Sucumbios – and incorporates the Parque Nacional Sumaco Napo-Galeras (declared in 1994), a number of differing zones of management and the Payamino territory, amongst others. It is funded by cooperation between the German Government and MAE. A map of the Reserva de Biosfera is shown in Figure 4.2 below.

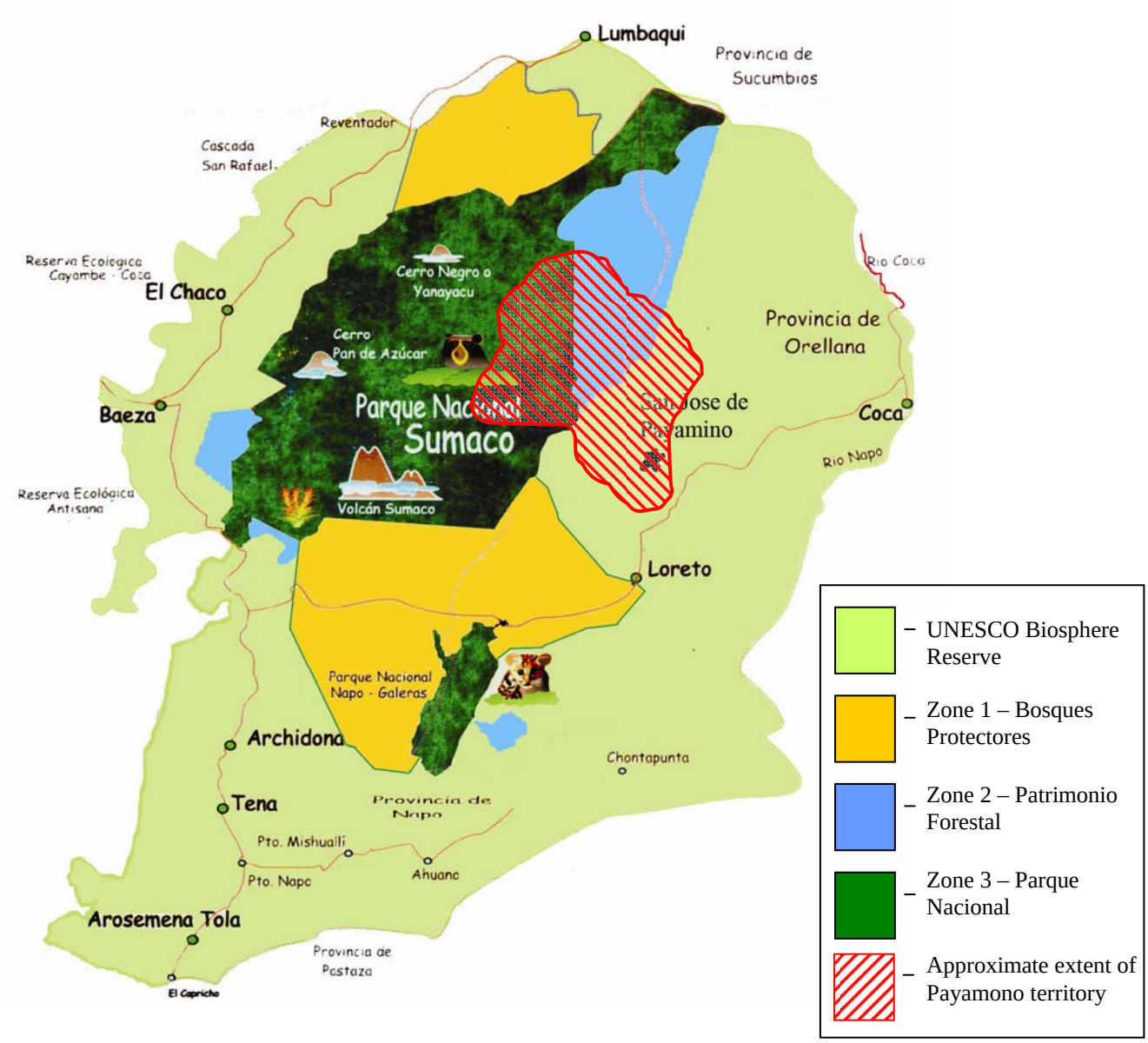


Figure 4.2 – Map of Zoning of Reserva de Biosfera Sumaco

(adapted from CORBS, 2007)

There is no doubting that the biodiversity of this area and quality of the natural habitat deserves protection. More than 250 species of tree per hectare have been recorded many of which are endemic to the area, and all in all over 6000 species of plant have been recorded in the National Park alone. As well as this, 81 species of mammal (including 28 bats) have been sighted – equivalent to 50% of the total registered in the entire Amazon Basin – including enigmatic high profile species like Jaguar, Puma, Ocelot, Spectacled Bear, Neotropical Otter, Tapir, Giant Armadillo, Giant Anteater and numerous species of monkey (CORBS, 2004)

The management zones outlined in Figure 4.2 are interesting and, especially given that the Payamino territory overlaps them, important to understand. Zone 3 – the Parque Nacional – is a highly exclusionary zone, nobody is allowed to live here, no hunting, fishing or extraction of timber is permitted. In zone 2 – Patrimonio Forestal – is managed solely by the indigenous groups who live in the area. They are not permitted to have houses here, but are allowed to hunt and fish without dynamite or poison. These areas are very remote, they are mountainous and rarely visited. Within zone 1 - Bosques Protectores – the land is managed by the indigenous communities who are allowed to live and utilise the natural resources as necessary. Oil, timber and mining companies are, in theory, not allowed to enter, but as the Government has sold concessions in this area they are legally allowed to try and negotiate with the indigenous groups and some exploration has taken place.

The rest of the area, the Biosphere reserve, is managed with the following objectives (CORBS, 2004).

The conservation of:

- The cultural diversity, traditional values, knowledge and practises.
- The diversity of natural resources (ecosystems, species, variety)
- The forest services (water, soil retention, prevention of flooding etc)

The introduction of sustainable programmes of economic and human development:

- Productive activities for example the rearing of animals or mushrooms.
- The processing of renewable forest products such as palm thatch, vegetable oils, fibres, wood. Providing education for the improvement of agriculture.
- Support the planning and execution of community plans on local, regional and national political levels.
- Support the development of tourism and education.

While the UNESCO propaganda is highly compelling and extremely slick, with well designed posters and booklets distributed around and throughout the area, an

accessible and beautifully designed website, and admirable aims and objectives, as is demonstrated from the quotes below there is little realisation of this on the ground.

"The UNESCO thing is a lovely line on a map and nothing more. There are, as far as I know, no resources which come directly to the area to support that in any way." RP 10.08.07

"Its only, its just on the map." DG 30.08.07

This designation may highlight the importance of the habitat and area, but the Payamino feel little of the benefits promised.

4.5 Integration with the Payamino

"Ummm, so, my understanding is that there is a national reserve which covers part of the Payamino territory, there is a national park which covers part of the territory and then I believe that all of the Payamino territory should at some level be conserved according to the agreement with Project Payamino." RP 10.08.07

Of all the protected area designations discussed above, the one of most interest to me is the area shaded in red on Figure 4.2 – the Payamino territory. This area of approximately 60,000 hectares is being conserved by the Payamino community in conjunction with an international NGO, who, as has been discussed earlier, I work for.

I interviewed an employee of the Parque Sumaco Napo-Galeras and asked him if the creation of the park had caused conflicts. He said that there was a process of open consultation at the time (the park was officially opened in 1994) and that because much of the land is remote and mountainous there was little dispute. One other thing of interest he stressed was that the land which used to belong to the Payamino which is now inside the National Park is now owned by the Government. He wasn't sure whether any compensation had been paid to the tribe or not but believed that many of the benefits (building of the village, financial support etc) received over the past decade would not have occurred had the community opposed the Park. He believed that the National Park is a good thing for the community and that they all respect the rules in place, which he has to enforce. If someone was caught disobeying the rules the punishment seems severe – details would be taken and the military or police summoned by radio to arrest the perpetrator who would then be arrested and fined. He

laughed when I asked how often this happened and simply said it was a very strong force and very rarely did people take the risk.

"Because I know the National Park they have a lot of rules, only they put on the wall the rules, but the people they destroy the jungle. But if you take care of the people they can take care of the jungle. I think the best way is working with, it's really, how say, really hard, its I think 100 per cent more hard to work with the community but I think the results is maybe 80 percent better."
DG 30/08/07

Of the community who completed a questionnaire 23% used to have a house in the National Park of whom 50% used to hunt or fish in the area and a further 12% used to hunt or fish in the area but not have a house. All respondents claimed to respect the rules in place now. As illustrated above, interviewees had little understanding of what, if anything, the biosphere reserve actually provided to the area, but were aware that the Payamino territory now was protected under the project agreement.

The integration of the Payamino territory into these new conservation landscapes brings forward important questions of whether or not conservation and development are now intrinsically linked in management practice. Figure 4.3 below shows the overwhelming response of interviewees when questioned on this matter.

RP – Yeah, yeah. Its um, I think it's a sociological fact. People will come in here. There is a road. And there will be a road whether we like it or not to the Payamino area. All areas are going to get developed because the population of the planet is still increasing. So from that perspective it's just going to happen. So what I think we have to do is provide them with the tools to conserve the area in spite of that.

SW – [exhales] My head says one thing and my heart says another. I think my head says that you inevitably have to have the two together, but there is a part of me that likes to think that we should stop putting mans interests first, or we should stop putting mans interests anywhere at all. Just look at the wider picture, the much longer term and say that yes we should be preserving the forest for the sake of the forest. But, to make it work I think you have to be realistic and recognise that you have to involve the people. Its horribly wrong not to.

JS - Conservation, community and community development are linked. Somehow conservation has to pay for the development of the communities within its boundaries otherwise it is not sustainable. If a community with or without rights to the area they live in, don't gain from the area they will try to - one way or the other. It is a matter of directing that development and finding an acceptable compromise between development and conservation, but the area of conservation is more likely to survive if it can sustain the community, therefore conservation has to "pay" (tourism or sustainable harvest of products).

Figure 4.3 – Interview Responses

Chapter 5 – Community Conservation in Progress: the Payamino Project

The story of the Payamino Project starts 39 years ago: In 1968, at the age of 4, Darwin Garcia moved to the Payamino territory with his father who was the first teacher in the area. Darwin spent the next 15 years of his life growing up as a Payamino child, learning the secrets of the forest and living a traditional indigenous way of life. At the age of 19 Darwin left the community to pursue his education and, having worked for some time to raise enough money, put himself through University, studying to become a Jungle Teacher. Over the next 20 years Darwin kept in touch with his adopted community and in 1997 returned to the community to set up a tourist enterprise. Darwin's enigmatic character, very good knowledge of English, and love and understanding of the forest he grew up in meant business was good as word of mouth recommendations spread. In 1999 Nan Swannie, a graduate of the University of Glasgow Zoology Department, bought Darwin's tour after reading a recommendation at the South American Explorers Club. Inspired by Darwin's mission to protect his forest Nan returned to the UK and told Dr Stewart White about the area. He decided to take Nan at her word and led the first University of Glasgow Ecuador Expedition in the summer of 2000 to study the ornithology of the region.

With the first Glasgow Expedition being a success, the door was opened for a more comprehensive project to be implemented. In 2001 Nan and her partner Jens Sisgaard, an employee of Aalborg Zoo, Denmark, set up a project called Zoos Go Wild and secured funding from the European Association of Zoos and Aquaria to spend a year in South America researching 42 conservation projects with the intention of providing European Zoos with information to set up in-situ conservation programmes. Aalborg Zoo was the first to agree and in 2002 the Payamino Project was officially designated with a guaranteed 10years of funding. Since then a further four zoos have started programmes with projects visited in 2001.

"Project Payamino was initiated because there was a need for support in the community San José de Payamino and because they have a territory of 60.000 ha of primary rainforest in one of the most species diverse areas of the world. And

because there is a Darwin and a connection to the zoo world. The focus has always been wildlife and habitat protection, but we soon realised that the way forward was to work with the community and focus on education, health and alternative, sustainable incomes. At the same time we wanted more research for two reasons: 1. to find out what was hiding in the forest and 2. to use these findings to raise the value of the area in the eyes of the conservation world and the official Ecuador." JS 17/09/07

A deal was struck. The community agreed to stop hunting and fishing for the bushmeat market; to stop the sale of live animals; to stop using poisons and dynamite in fishing and hunting; to stop selling timber and to stop oil, mining, and logging companies from entering the community territory. In return Aalborg Zoo agreed to provide $15,000 per year to support the community, split between community projects, buying handicrafts and employing Darwin as the Project's Ecuadorian Co-ordinator. They also agreed to provide alternative sources of income to supplement the zoo's money, to provide a sustainable future for the community. This project is now exactly half way through its initial ten year agreement and is entering what could be a difficult phase as promises made need to be fulfilled.

5.1 Aims and Objectives of the Payamino Project

The Project aims to unite biological science and development practise to create a protected reserve with a community living in balance with their surroundings adapting to modern life whilst remaining in control of their own future. The aims and objectives were created with the community at a number of workshops and are outlined in Figure 5.1 below. The project aims to be wholly participatory and empowering to the community, aiming for the community to be making the decisions over how to best run their own lives. Indeed 73% of questionnaire respondents had been involved in the initial project meetings in 2001 and 50% had been involved in other workshops since then.

"Before the start we went with Jens several times to the community to talk to them, to because its difficult when you have some project to help them sometimes they don't understand why. So we went with Nan and Jens a lot, several times to talk about the project they want or would like. But all the community accept." DG 30/08/07

The four main objectives and how these are split up are shown in Figure 5.3 below. The success or otherwise of these aims will be evaluated in Chapter 5.4.

Central to the projects values is what in developmental terms would be called the use of indigenous knowledge that "calls for the inclusion of local voices and priorities, and promises empowerment through ownership of the process… Central to this rhetoric is the inclusion of the local knowledges of groups at whom development projects are aimed, rather than assuming and relying on the universal applicability and superiority of scientific knowledge." (Briggs and Sharp 2004: 661)

This position has related problems however, as none of the project strategy team interviewed believed that the local community understood why the research being undertaken was necessary or wanted. That being the case, how can local knowledges be incorporated into this side of the project?

Payamino Project Vision

"By the year 2012 the Payamino/Sumaco area will be recognised as a special place in the world to be valued and protected, both locally and internationally, acknowledging that its environment is significantly important, and respecting that substainably it supports an indigenous community who enjoy a healthy, secure, and natural way of life."

Our Values...

That we Respect and value:

The community's culture, way of life, traditions, ideas and views
What is current in the community e.g community dignity and pride
All contributions, donations by all who get involved (e.g. volunteers)
What gets developed in the future by us or the community

That we are Non Exploitative. This value is behind everything we do, plan to do or enable to happen, whether it affects the community, environment or individuals

We aim encourage + welcome Community ownership and involvement:

Giving them understanding of what we are proposing/doing – enabling them to partici pate so that they end up driving the whole project
Community involvement i.e. a local participant in all activities to allow skills transfer)
Community are involved in the decision making process supported by appropriate ex pertise and outside knowledge which allows them to make informed choices

We care about this environment:

Sustainable Development: Concept of sustainability fundamental to approach on any activity (social / economic / environmental) e.g.:
Try to be Carbon neutral, work towards a local economy base for the future, use re sources sustainably, minimise pollution (local and international), consider global con text to what we do (i.e. international travel + global warming predictions). Consider "Embodied energy" (i.e. make life cycle analysis of what you are doing e.g. transpor tation /quarrying/processing of workers /tourists)
We will nurture and promote Bio-diversity.

We encourage and welcome Links with other projects and communities and the sharing experiences i.e. a 2 way - networking approach

We encourage and welcome the Dissemination of information.

Our Objectives...

Protect the Payamino Environment:
1. Preserve existing jungle
2. Understand + promote the bio-diversity of Payamino
3. Promote good animal welfare
4. Ensure the jungle's future.

Support the development of the Payamino Community
1. Support Education of all ages
2. Improve health of all ages
3. Protect and give value back to Culture
4. Skills training for sustainability in the modern world
5. Find and develop sustainable economic alternatives –i.e. eco-tourism and handicraft sales.

Increase Project Recognition:
1. Working with Zoos, Universities and Museums
2. Partnerships and sponsorships
3. Getting the message across

Manage the project:
1. Securing Funding
2. Managing and minimising Risks
3. Reporting to all involved

Figure 5.1 – Payamino Project Vision, Values and Objectives

(from Payamino Project, WWW)

5.2 Current Management Structure

The Payamino Project steering group currently meet once a year either in Denmark or the UK. Whenever possible Darwin has joined the group for this meeting and has always provided updates of the situation in Ecuador. As more institutions have become involved the group has grown so that when the group met in Aalborg this year we numbered 14 people from a variety of institutions and with a broad variety of experience and interests, although with the majority biased towards zoological or conservation research.

Of great interest to me when looking at the Payamino Project was the actual structure of the project management of such a small organisation, how the differing layers of management inter and cross divide and indeed, whether or not there is a coherent management strategy here. Figure 5.2 below shows the management structure as displayed on the Payamino Project website. This is a complex diagram, and is to a certain extent out of date as some of the people mentioned have moved on and others have joined.

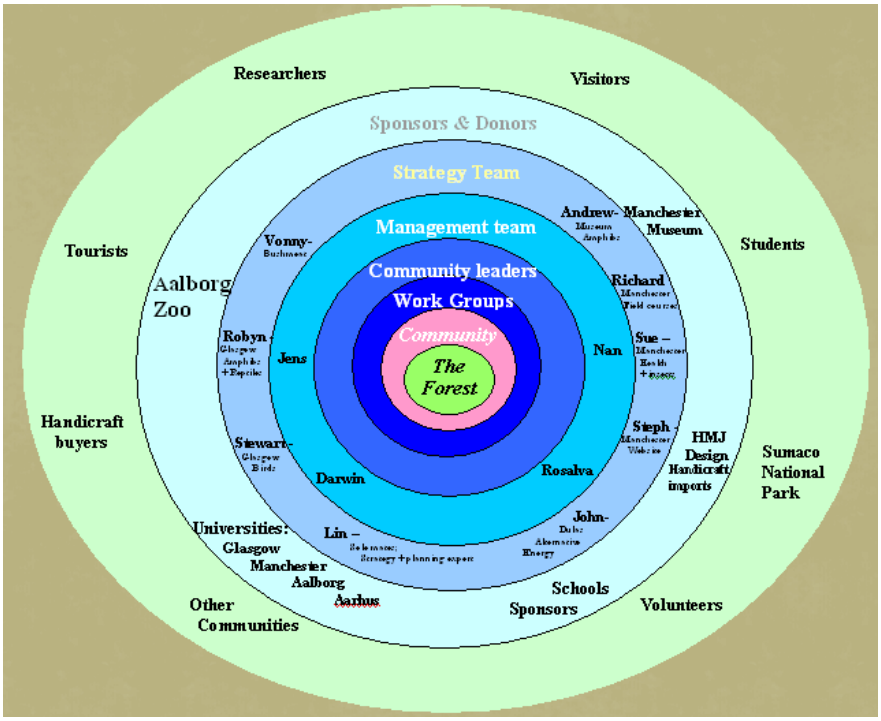


Figure 5.2 – The Management Structure of the Payamino Project

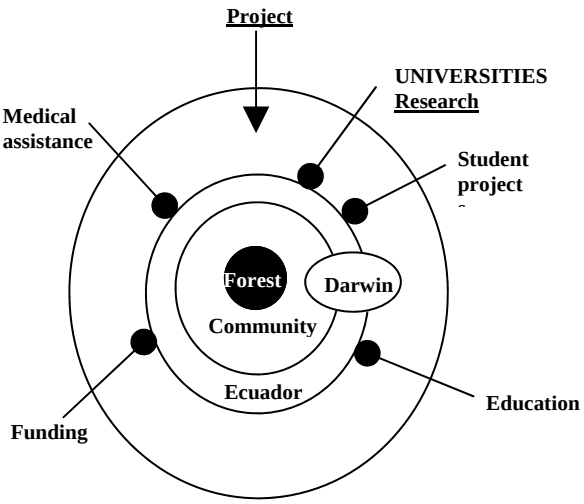
(from Payamino Project, WWW)

I am particularly intrigued by three areas of this diagram. Firstly, the centre – how the project actually runs at the community level. The description here is that after the forest and community at the heart of the project, there should be 'Working groups', then the community leaders and *then* the international management group. While this design is ideal in theory it does not appear to be functioning in practise. Instead, the roles of the international management team seem to come before the community leaders and there is no sign of the 'working groups' which in my mind should be the most important steps in realising what the community wish to happen.

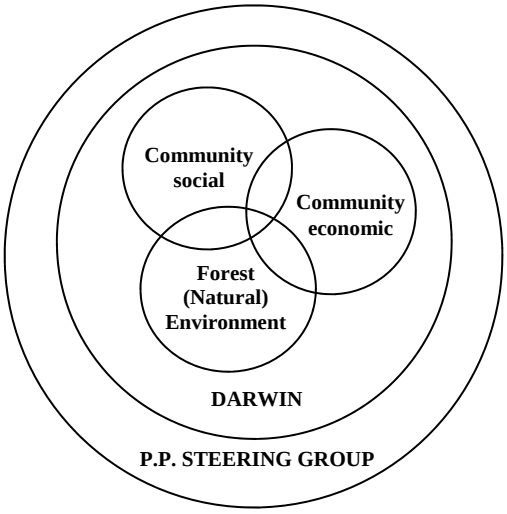
"The people who are driving the project at the moment are Nan and Jens, Darwin and the other people in Europe who are organising it. The community are probably having very little input into what's driving the project. They have some input into the decisions that are being made, but as far as instigating things, I think they have quite a passive role."
SW 03/09/07

The second level I am interested in are the two zones on the diagram entitled 'Management Team' and 'Strategy Team'. From what I have seen these roles are very poorly defined with a lack of formal structure which leads to a lack of responsibility in certain areas where there may be less expertise, such as financial accounting. The third area I am interested in, as discussed in Chapter 4 is how the Payamino Project interacts with other protected area regimes in the region. In this model the National Park is on the periphery and the Biosphere Reserve not even mentioned. I believe this to be an accurate reflection of these interactions at present.

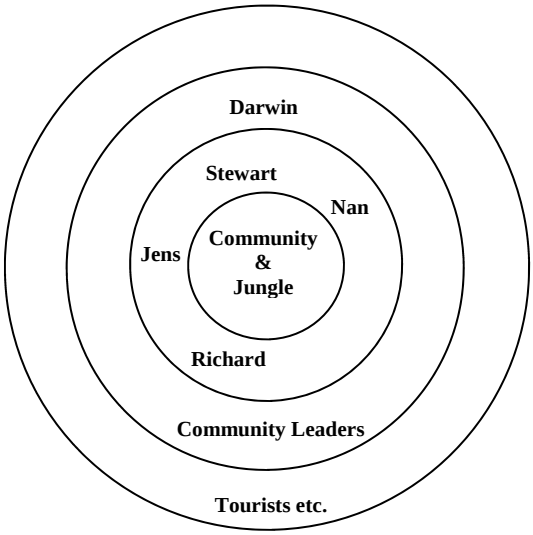
In each of the interviews I conducted in person with members of the management team and strategy team I asked them to draw me an interpretation of the current management structure as they see it now. Three of these diagrams are shown in Figure 5.3 with the resulting explanations. None of the respondents noted the role of the 'Working groups' and only Darwin placed the community leaders in the model. Interestingly, both RP and AG discussed the role of Darwin himself. This will be examined further below.



AG – Yeah, its very very similar to that… [long pause while drawing] I think maybe I'd put another ring in there [long pause – voices speaking in Spanish and English in the background] Yeah, so something similar to that, basically, it puts the forest first in the middle, obviously the community round the outside, Darwin is a lynch pin there. Also, Ecuador [pause] before the project, you know we're supporting a project in Ecuador and I think that shouldn't be underestimated. I think that should be acknowledged.



RP – Yeeeaasss [chuckles] [long pause ~ 1min 30 secs] Yeah, so without going into all the, trying to break down the steering group and things and sciences everything else like that I think that. To me, this barrier is the difficulty. I think these people [indicating steering group on diagram] do not interact with these aspects directly enough and its all filtered through [indicates Darwin], and its [pause], you know, and I realise that the project would not exist without Darwin. But I think that that's true.



DG – Yeh, the first point is the community. [pause] Yeah they are the centre of help. The community, jungle and jungla. That's, around this, are coming, how you say it, the helpers, that could be, that is Jens and Stewart and Richard and Nan. They are supporting this project.

MM – And where are you?

DG – I am out! [laughs]

MM – No, you're very important

DG – I am here, they are supporting this work. I am managing here, Darwin and community leaders and yeah. Like that. And then in the back coming the tourists, you know like that.

Figure 5.3 – Interpretations of Management Structure from Interviews

5.3 Difficulties Facing the Payamino Project

5.3.1 The Gatekeeper Effect

"And that has always been a weakness, the amount of information coming back from Ecuador and being sure that what Darwin was telling us was exactly the truth. Darwin does have this habit of telling you what he thinks you want to hear, and that, to my mind, has always been a bit of a problem in the whole running of the project." SW 03/09/07

Cook and Crang (1994) describe the issue of having 'gatekeepers' as being when there are certain people who are needed to access a research location. This situation however, is slightly different. As both AG and RP point out when discussing the current management structure (see Figure 5.3 above), Darwin is the lynch pin holding the project together. Up until now, all communication with the community has been through Darwin, all of the initial project meetings were translated by him, and basically the whole project rests on his shoulders. There is a huge amount of trust placed in him, not least to administer and record the financial side of the project in Ecuador, a role of which he apparently is not fond. This position is problematic for a number of reasons, not least of which is that if something was to happen to Darwin at present (oil companies have paid to have him killed in the last few years) the project would be left in a very difficult position.

"I just find that it's a little bit frustrating to have the views of the people third or fourth hand almost" AG 10/08/07

All communication is filtered through Darwin as most groups visiting the area do not have fluent Spanish speakers with them and Darwin was, until our arrival, the only person in Ecuador who has contact with the rest of the Project Management and Strategy Teams.

5.3.2 Community Interaction and Participation

"Because of a lack of consultation and participation, local people, whose land is being treated, rehabilitated or upgraded, find themselves participating for no other reason than to receive food or cash. These incentives slow down the pace of work, create dependencies and effectively dissuade farmers from voluntary conservation" (Pimbert and Pretty, 1995: 6)

The above quote from Pimbert and Pretty (1995) demonstrates a commonly voiced concern with community conservation projects. The issue of plural participation is not an easy one to solve, for even in a coherent community like the Payamino there will

undoubtedly be voices which are heard and voices which are ignored. Each interviewee was shown this quote and asked to respond, keeping the project in mind. They're reactions are shown below in Figure 5.4.

RP – No I think it's a really good, it's a really good and important point, and something I think about a lot. Are we simply imposing some conservation on these people and, I would say at a certain level we are [pause] umm, and we're trying to do it in the least evil way possible.

JS - True! That goes for any kind of work or project also here in the zoo. That is one of the reasons that we rarely give money directly, we would rather pay for a job done.

SW – Well [pause] I think, well I like to think, that right from the start there has been consultation. I wouldn't like to think that anybody could point the finger at the Payamino project and say there's been a lack of consultation. Right from the start everyone has been very careful that the community has been consulted on anything that has been done, and that the community has always had a veto on any ideas. [long pause, exhales loudly] Whether some people in the community might see the project as a means of receiving food or cash, that's another matter. That may indeed be the case for some of the people in the community. Whether everyone in the community has the foresight that Darwin has to see into the future and see that the project can hopefully protect the community and they're way of life into the community I don't know. I suspect that quite a lot of the community may indeed just see the project as a source of short term cash.

AG - Its interesting after the comments I've just made, umm, [pause] its just very very difficult for me to comment on it, because I don't know what level of consultation has been made. You know, from my point of view, I'd like to ask Darwin, you know, how often do you have meetings with the community? Who do you talk to in the community? Is this a general feeling throughout the community? Do you attend meetings, do they? This level of consultation to me is just an unknown so I cant really, I couldn't really comment.

Figure 5.4 – Interview responses

"I would think that a large majority of the community probably don't have any interaction and perhaps don't have a huge understanding of what the projects about." SW 03/09/07

There is a definite feeling of unrest within the project management present in the Payamino this summer. All of those interviewed expressed doubts, as illustrated above, that the community really understand the research side of the process and do not interact fully with this side of the project. There have also been problems this year with lack of maintenance of the project Research Station and with items, including food, toiletries and, in one case, money, being stolen from the Research Station fairly regularly.

"I think that personally, and what I can gather from working with the guides over the last two or three years and what we see of the community and of our presence here there seems to be a link missing somewhere along the line and I don't know exactly what it is. It's difficult to put your finger on it. But there seems to be a miss, well not a misunderstanding but a lack of appreciation for why we're actually here really and what we're trying to do. And that's frustrating because its alright bringing the students out here, they're obviously benefiting greatly, its alright studying all these different species, but I think its really necessary that the community play a big part and they understand why we're here and what we're doing and they're behind it. And a lot of that is reflected in sort of, things like this year the upkeep of the place and things like that. And, in general from what I overhear, and just from the way that's there's this, I don't know, I cant put my finger on what it is, but there's definitely, they seem a little bit unsure about what they're role is, and what our role is, and why we're here." AG 10/08/07

"In a world made up of complex interrelationships and dependencies, to talk of coherent communities, within which some are members (and therefore somehow able to represent their community) and others are outsiders (and therefore cannot) is simplistic and misleading." (Briggs and Sharp 2004: 671) However, in this case it seems to have certain merit. While undoubtedly within the community itself there will be power balances and struggles, issues of representation and winners and losers, the Payamino community seem very united. Every decision made with regards the project, no matter how large or small, is made by a consensus vote. Indeed the Payamino have such a strong sense of self community that they are unhappy with the use of non-Payamino guides on their land. This issue was raised with me on a number of occasions, with Payamino community members complaining that Darwin was employing non-Payamino men, using money which could be going to community members.

"One of the bad things in the community is that they are not really responsible, it's no important the time for them, its nothing. Meaning nothing. That's making sometimes making me very angry. Sometimes I bring some people, another person like Almehdo, because he know, but the community they say 'no! we don't like." DG 30/08/07

Darwin employs these men because he trusts them, because they work hard and understand the importance of the western ideal of time management, which is a complaint raised against the Payamino community on a number of occasions. Unfortunately if a group of visitors is only here for two weeks, being a day or two late could have huge consequences. There seems to be no easy solution to this situation.

5.3.3 Financial Transparency

There seems to be great confusion as to what actually happens to the money which comes into the project. Those interviewed could tell me where the money came from but not where it ended up. This year approximately $50,000 will come to the project in Ecuador: $15,000 from Aalborg Zoo, $18,000 from the University of Glasgow Expedition, $9,000 from the University of Manchester Field Course and $3,000 from the University of Glasgow Field Course. There should also be approximately $5,000 available from donations and fundraising in Denmark and the UK.

"I've got a reasonably clear idea of where the money comes from… As far as how the money is spent I have a less clear idea of that... certainly, off the top of my head I've got no clear idea really where the money's been spent." SW 03/09/07

Of this $50,000, $11,000 is due to be spent directly in the community. A budget has been drawn up to allow $2,000 for community use (buying petrol, helping with healthcare costs etc), $5,000 to be spent on education (buying textbooks and paying the matriculation fees for every pupil in the community) and $4,000 has been set aside for the community led sustainable development program. The community have decided that they would like to build a series of three fish ponds to cultivate fish which will provide a good nutritional source and, when the fish are smoked, can be sold at market.

Darwin's salary takes a further $7,000 and it is likely that a doctor will once again be employed to visit the community once a month and including medication costs this will cost approximately $5,000. This leaves an amount of $27,000 unaccounted for. Whilst undoubtedly there are other costs incurred during the year, and especially during the summer months when guides must be employed, and much petrol bought for the near constant canoe trips up and down river, it is difficult to comprehend where that amount of money can go. Certainly Darwin would not be drawn on it during interviews and, due to very poor accounting the project management seem to have little knowledge either.

"I mean, I'm very much in the dark as to how the process works, how much money they get each, whether everybody gets the same, whether you know, whether new stuff is bought as they need it, whether medical stuff is provided, what, what happens… I think it's a bit, it's a very touchy subject when you start talking about money and who gets what. We sort, we trust Darwin to divvy out the money as he sees fit." AG 10/08/07

It seems that the financial side of the project has long been a source of contention, with no one wishing to take responsibility to finally get to the bottom of the matter. Aalborg

Zoo does not need feedback on where their money is being spent and donors and visiting groups are happy to pay for the experience with the knowledge that the project is working. At the moment it seems that the money is transferred to a bank account controlled by Darwin in Coca. When the community requires money, usually after a meeting to decide exactly how it is being spent, Darwin dips into this account and pays for whatever is needed.

"Its unclear to me whether that's because their needs to be somebody who qualifies that because clearly there is no bank at Payamino. Or whether he feels that they are not physically competent to deal with that, which may be entirely true, because they have no experience or training with that" RP 10/08/07

Either way, this is a dangerous situation to be in. Receipts are not collected and there seems to be no record of what is being spent where and on what. It appears that Darwin doesn't actually draw his $7,000 salary per year but instead uses this money to pay for equipment or fuel which he then keeps as his own. This is a highly complicated arrangement which needs to be made clearer and more transparent in the future.

5.4 Quantifying the Success of a Community Conservation Project

Considering the fact that "conservation practises are not readily apparent because they tend to be 'nonactivities' such as not cutting" (Briggs, 2005:110) and the belief that conservation and development goals are not the same (Berkes, 2004) the issue is raised of how is it possible to quantify the success of a community conservation project such as this. As mentioned previously the Payamino Project has four interlinking objectives: Firstly to protect the natural Payamino environment; secondly, to support the development of the Payamino community; thirdly, to increase the Projects recognition; and finally to manage the project. The Payamino management group currently has no record of successes in the field, and thus no way of objectively quantifying the successes, or failures, of the project over the past 5 years. In the following sections I will review each of the four objectives with their specific aims (as in Figure 5.3) and attempt to evaluate this. Overall I would say that the project has had a very successful first 5 years, but that there is also room for improvement in the future. The community certainly seem very happy with the project, as 96% of questionnaire respondents answered that they were happy with the project. The reasons given for this were in

every case that the project was helping with education and health – these are obviously areas of high importance for the community and should be prioritised in future budgets.

5.4.1 Objective 1 – To Protect the Payamino Environment

1. To protect the existing Jungle

The project seems to be successful in the initial goal of protecting the environment. The community continue to rebuff the efforts of oil companies to enter the area and, as far as we and the project coordinator are aware, none of the community are hunting or fishing for the bushmeat market, selling live animals or timber. There are renewed worries about the use of dynamite in fishing and this is an area which Darwin intends to discuss with the community in the coming weeks.

2. To understand and promote the biodiversity of Payamino

This is also going well with research now ongoing into a number of different aspects of the areas biodiversity. Although all of these studies are still in the data collection stage, everybody undertaking research in the Payamino territory is confident that this is an area of unparalleled biodiversity.

3. To promote good animal welfare

I have seen no evidence of this aim being put into practise in any way, although there may have been specific programs in the past.

4. To ensure the jungle's future

This is a difficult aim to quantify, but there seems little doubt that the work of the project at present is ensuring that the biodiversity and tree cover remains high quality. This combined with the continued absence of oil and mining companies' means that, at present, this aim is being met. This also raises the question of how biological research and development interact and whether they have convergent or divergent goals. It would appear that they are working together at the Payamino, as was explained to me thus:

"I think that through the research we're doing, we're providing the information to say that this is a valued area. It's lovely to say that in a statement, but somehow you have to quantify that, so I think that a lot of the research we're doing quantifies that. The field courses that we're doing, contributes to it in the sense of providing a secure way of life because it provides that financial security. I think that also when we do things in association with the field courses, like bring in language students, bring in a doctor or something like that, it clearly directly contributes to having a healthy and secure way of life."
RP – 10/08/09

5.4.2 Objective 2 – To Support the Development of the Payamino Community

1. To support Education of all ages

This objective is definitely being met at present. When the project started in 2002 there were only 34 students registered at the school. By 2006 this number had risen to 105 with one female student also being supported through higher education. Alongside this formal education, handicraft workshops have been run with local experts and some teaching has been conducted by Glasgow University Expeditions.

2. Improve health of all ages

Again this is a presently successful aim. Since the projects inception money has been available to cover medical emergencies and over the past two years, the project, through Manchester University, has provided more routine medical care, paying for a doctor to visit the community on a monthly basis. This is seen as a major point for the community and it is hoped that this will continue in the coming year. In 2006 a UK doctor accompanied the Manchester Field Course and conducted a comprehensive review of the community's health at that time. The results were positive and overall there was no evidence of malnourishment or malaria at that time.

3. Protect and give value back to Culture

This is a very difficult aim to quantify and one of which I have little evidence either way.

4. Skills training for sustainability in the modern world

This is currently being implemented with IT courses. The project is shortly going to buy a computer for the community and training will be given by the Research Station Managers in all aspects of this. English language training has also been requested and courses will be run over the course of the coming year. Other skills needed, for example for the specific dietary requirements of the new fish pond project, will be paid for by the project as well.

5. Find and develop sustainable economic alternatives

This is an ongoing objective which looks to be working well. Income from tourism groups was strong to start with but has dropped over the past two years, however income from the University research groups is providing a very healthy income at present. This coupled with plans for the fish pond and future sustainable projects means this can very definitely be considered a success at present.

5.4.3 Objective 3 – To Increase the Projects Recognition

1. Working with Zoos, Universities and Museums

This has definitely been a success. Since the project inception when solely Aalborg Zoo and Glasgow University were the project partners there are now a number of different institutions becoming increasingly involved. Manchester University and the Manchester Museum have been strongly involved for the past three years and now the Universities of Aarhus and Aalborg in Denmark are becoming interested. Strong links have also been developed at the Catholic University in Quito and these are hoped to be increased in coming months.

2. Partnerships and sponsorships

As far as I can tell little to no success has been had in securing financial partnerships or sponsorships. I am uncertain as to whether this is due to problems with applications or simply because no one has had the time to attempt them.

3. Getting the message across

Again there has, I believe, been little success in 'getting the message across'. The project website is in urgent need of a revamp as currently it looks outdated and many of the links are broken. This has been discussed at the annual meeting and I am as guilty as anyone for not making sure that this was done sooner. There have, I believe, so far been only one or two papers published on the area and these have not been made easily available to increase recognition. Much work needs to be done to make this objective a success.

5.4.4 Objective 4 – To Manage the Project

1. Securing funding

This objective has had mixed results at best. Funding has been secured from Aalborg Zoo for 10 years and a great deal has been raised through the various universities involved. Some research funds from Manchester University have been secured for PhD students, however, there have been no successful funding applications as yet and this needs to be made a priority, especially if future funding from the zoo is unknown.

2. Managing and minimising risks

I am not altogether sure what this means, but if it refers to health and safety then again the results of this are mixed at best. There is not a code of conduct made available for visitors to the area nor any sort of declaration of risk and risk management at the Research Station. These would not be difficult documents to produce and in the

increasingly litigious times in which we live it may well be wise to look into this before the next arrival of tourists or students.

3. Reporting to all involved

Reporting about the project has been sporadic at best, generally building around the time of the annual meeting and fading out again shortly thereafter. There are now bi-monthly reports produced by the Research Station Managers, and as research commitments continue to grow these issues should become a thing of the past.

5.5 The Future of the Payamino Project

"I am too worried about that. I am too worried. Because some time when I sit down in the jungle, you know at research station you can see very good nature there, maybe we are doing a little late the destroy of the jungle. We stop the project it's just we stop for 10 years the destroy of the jungle after that again. That is making very sad to me because it's just doing very little." DG – 30/08/09

Halfway through an initial agreement is a very difficult time. Too early for negotiations to be opened about a new agreement, but long enough to have seen the positive effect the project is had. It is all too easy to worry about how life would be without the international investment. The project is also looking into new and exciting directions at the present time. Aalborg Zoo has introduced another Danish Zoo to the neighbouring community to San José de Payamino and work is well underway to strengthen links further in this region.

Importantly, Darwin Garcia has become a political figure of some note in the region, helping President Correa to election victory and now he has the ear of the top ministers in the country. Canton Loreto has become the first in the country to be declared a Canton Ecologico meaning that oil, mining and timber companies are in theory prohibited from operating in the area. This is still in its early days and much work, which the Payamino Project hopes to influence, is being done to make this a realistic, achievable goal and not simply another paper designation. Whatever the outcome, I strongly believe that the project must be careful not to lose focus of the Payamino, to make sure that promises are fulfilled and that the future is secured for this community and their forest.

Chapter 6 – Conclusions and Recommendations

"The conservation of biological resources is not ultimately about biology. If it is to achieve its goals…in the end biological conservation must be about people as much as about the environment and biological phenomena: it must deal with human customs, human relations, human motivations, political institutions, and political structures that drive the interactions between people and their environment."
(Frazier, 2006: 316)

As has been discussed the Payamino Project has been very successful over the past five years, yet it remains to be seen how the project will move on over the next five years and beyond. The community conservation paradigm is extremely dominant at present, however various studies have concluded that this style of rainforest conservation-through-use is unlikely to be hugely successful in the long run (see Coomes, 2003) as the focus is simply on non-timber extraction uses and not on management goals for the conservation of biodiversity. Other studies have shown that providing development initiatives, while welcomed by the local population, did not change the underlying attitudes of communities towards conservation (Arjunan et al, 2006), and that over time it actually led to local communities questioning the role of local management and becoming more negative towards the term conservation (see Infield, 2001; Infield and Namara, 2001). Rutagarama and Martin (2006) argue that this is because international NGOs still see themselves as the only group with the expertise to be at the centre of the decision-making process. Bearing these points in mind, I make the following recommendations for the Payamino Project at this time:

Immediate recommendations:

I. **Rearrange the administrative side of the project – especially accounts, website and charitable status.**

This is necessary not only for the smooth running of the project, setting up good working practise for the future, but for increasing the international recognition of the Payamino territory a well designed website, the correct charitable status and a clear and transparent financial record is of paramount importance. Responsibility for this must be taken and carried through especially with potentially problematic or uncomfortable issues such as finance.

II. Produce document charting the projects outputs (in Spanish where possible)

This has been discussed for the research side of the project but needs to be completed for the community side also. Producing a comprehensive document of successes is useful for many reasons – it provides a record for community highlighting the work and value of the project and it also provides a positive record for future funding applications.

III. Have more contact between researchers and the community.

This may be difficult with current restrictions with language but it is of utmost importance for the future of the project that community members get involved with the research process not simply as passive bystanders but gaining from the experience. While this process has started with the current project workers (myself included) living with the community, effort must be made in future for all the research groups visiting the area to have contact with the community, not solely Darwin and guides. Where local guides are employed every effort should be made to involve them in a collaborative research process – from project design, through data collection and output. Researchers should be encouraged to produce reports for the community on the research being carried out, on the importance of the research and especially on how the research links back to benefit the community.

IV. Set up a specific Payamino Project management structure in the community.

In line with the arrangement shown on the website, (decisions being made through community leaders and then through community working groups) this needs to be re-proposed to the community. Regular meetings need to take place and increasing routes of communication should be sought through sources other than, but not removing, Darwin Garcia for the following reason:

"I think there has to be tighter links between the people who come and the community. And there will ultimately be some gatekeepers, some filters, and that's just required for co-ordination. But I think that needs to be, umm, that task needs to be spread out a little bit more. For no other reason than, you know, if Darwin gets run over by a truck tomorrow, is that the end of the project? That's just bad business, bad management." RP 10/08/07

Having this structure in place in the community should allow for the project to grow in strength and should provide a more solid foundation in the community. I recommend a cross gender committee of community members made up of people representing the

following working groups: Guiding & Tourism; Handicraft Production; Sustainable Development Projects; Education and Health.

Long term recommendations:

V. Restructuring the management of the Payamino Project making roles clearer and more explicit.

For the Payamino Project to grow, if it is to continue beyond the initial ten year agreement as is to be hoped, and especially if it hopes to be of use in guiding the Canton Ecologica, I believe it will be necessary to restructure the Project management in both Europe and Ecuador.

"If it doesn't I think its doomed to failure in the sense of many conservation programmes are doomed in that once, because ultimately, us doing this from Europe is non-sustainable. And at somepoint, due to economics or change of people or whatever, that support will lapse to some extent and if its, if there not doing it themselves it all crashes and the next year the oil companies are in."
RP 10/08/07

More explicitly formalised roles will need to be defined, such as Chief Executive, Directors of Finance, Research and Development (see Figure 6.1 for one such possible arrangement) for at the moment too much is left to goodwill and inexperienced people. As the steering group continues to grow, as more universities and other bodies become involved with the project, these roles will become even more important. Where little experience is currently available (for example in finance) people should be sought with the necessary experience, these roles not simply given to someone who thinks they can manage. This will allow for further incorporation of important experiences to make sure that the project continues to strengthen. This is not only important within the European base, but in Ecuador too: making roles within the community more formal and making sure communication channels remain open at numerous levels within the agreement.

VI. Continue providing funding for long term sustainable projects as requested by the community.

These projects, such as the fish cultivation pond about to start, are key to the development of the Payamino as "an indigenous community who enjoy a healthy, secure, and natural way of life" (Payamino Project, WWW) and are extremely well received within the community. Projects need to be well managed, and training may need to be provided for this purpose, especially if, as is likely, outside technologies are being used. Suggestions for other projects must come from within the community as

they know what they need and want, some suggestions already being aired include a chicken farm, organic cacao or thatch palm plantations.

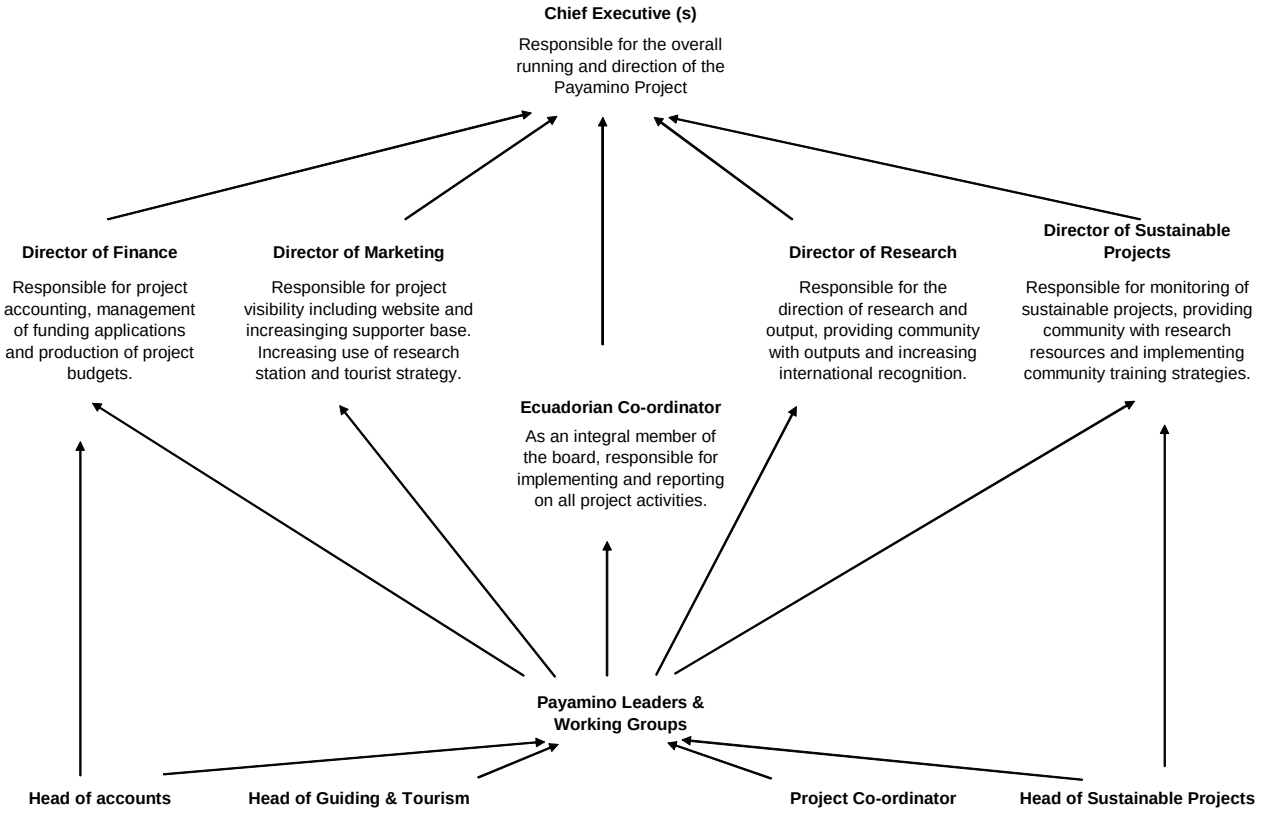


Figure 6.1 – One Possible Formalised Management Structure

A plurality of voices needs to be incorporated throughout to truly understand and to be able to aim scarce resources at those areas where they are most needed. The involvement of the community is paramount and needs to be continued and expanded. It is necessary to educate and inspire about the importance of environmental protection on both local and global scales. The views of natural scientists need to be incorporated as to what areas need conservation priority, and the views of social scientists, especially of those with development experience in the field, for understanding of achievable, useful and, importantly, quantifiable goals. There needs to be an exchange of knowledge: the conversation must be started and it must be open. Whatever the community decide, much work will still need to be done to provide the backing and long term support that will be needed to make sure that this project continues to be successful long into the future.

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Appendix A – Interview plan for Payamino Project Ecuadorian Coordinator

Interview plan for Darwin Garcia, Payamino Project Ecuadorian Co-ordinator
30th August 2007

1. Can you tell me about how you came to know the Payamino?

2. Can you explain how the Payamino Project initially came about?

3. Had you seen other projects? Was there anything specific from these that was important for the running of the project?

4. How did you decide on the focus of the project, the specific aims and objectives?
    i. How was the community involved? How many members were present and over what timescale did consultations take place?
    ii. Did the community suggest areas they wanted help with?
    iii. Did they want research done or just allowing it as a way to get financial aid?
    iv. Did you have to translate the meetings for Nan and Jens or was it all spoken in Spanish?
    v. Has the community involvement or the focus of the project changed at all over the past 5 years? Why?

5. What do you see as being the role of the community in the project presently? How are they involved with what happens? How do you see them interacting with researchers?

6. Can you explain the way the project is run? Two scales - firstly internationally – how do Denmark and Ecuador interact? And locally, what different parts are there to it? Not just research, not just community aid. Can you draw me an interpretation of the structure of the project?

7. Over the past five years a great deal of time, money and effort has been put in to make the project successful. Do you have any way of keeping track of this, a way of objectively assessing, or quantifying, the results of
    i. The development, community based side?
    ii. The conservation, forest based side?
    iii. and if so, what have those successes, and failures, been?

8. Can you explain the financial side of the project -
    i. How is it funded?

ii. Where is the money based in Denmark, the UK or Ecuador? Does it come from universities etc straight to you or through denmark?
iii. How is the money administered to the community? Does everyone get the same amount? Is the amount each family receives monitored? Does money go into a general pot for emergency use by the community and how is this managed?
iv. Could you split in approximate percentage terms how much has been spent on - administration costs; international travel costs; local travel costs; project wages; local wages (not including Darwin); buildings and equipment; maintenance; education and health care; other?
v. What financial feedback do you have to provide to Nan and Jens?

9. Do you believe that conservation and development are intrinsically linked (i.e. that you can't have successful conservation without community involvement)? In this case, which comes first, community or forest?

10. ***"Because of a lack of consultation and participation, local people, whose land is being treated, rehabilitated or upgraded, find themselves participating for no other reason than to receive food or cash. These incentives slow down the pace of work, create dependencies and effectively dissuade farmers from voluntary conservation"***
(Pimbert & Pretty, 1995:12)

This quote illustrates a commonly documented problem with community conservation projects, what do you think about when you see this with relation to Payamino?

11. What do you know about the other protected area designations in the Sumaco region (the National Park and Biosphere Reserve)? Do these interfere with the Project at all or are any resources available to help from these?

12. With five years of guaranteed funding left, do you have any plans post-aalborg?
i. Do you hope to be able to hand control completely to the community?
ii. Are there any changes you would like to see to the way the project is run or focussed?
iii. Ideally, what would you like to see occur over the next five years?

Appendix B – Questionnaire for the Community

¿ Hombre / Mujer? (H/M).....
¿Cuántos años tiene? .....
¿Cuántos personas en su familia? .....

¿Estuvo en el primero taller sobre Proyecto de Payamino hace seis años, con Darwin, Nan y Jens?

Sí No

¿Estuvo en otra taller sobre el Proyecto en los cinco años anterior?

Sí No

¿Usted trabaja con el Proyecto en los cinco años anterior?

Sí No

¿Si sí, que hace?

Guía	Construir las casas	Hace artesanas
Conducir la canoa	Llevar cosas para turistas	
Otro.....		

¿Usted recibe algunos de los siguiente cosas del Proyecto?

Gasolina	Gas	Recursos de Escuela
Salud cuidado	Ropa/Botas	Dinero
Enseñando	Otro.....	

¿Vende artesanos en los cinco años anterior?

A turistas ?..... A Nan?.....
En la ciudad?.....

¿Que compra en Coca? ¿Que crece en su finca, o recoge en la selva?
(Escribe **C** para Coca, **F** para finca y **S** para selva)

Arroz	Papas	Sal	Cebollas	Pollo
Yuca	Zanahoria	Azúcar	Huevos	Maíz
Plátanos verde	Aceite	Harina	Carne	Bananas
Naranjas	Frijoles	Avena	Leche	Otras frutas
Madera para cocinando		Madera para construyendo		
Otros?.....				

¿Que quiere aprender?

Ingles	Español	Contabilidad	Artesanas	Guiando
Escribiendo informes		Escribiendo sobre nuevos proyectos		

¿Esta feliz sobre el proyecto?

Sí No

¿Si no, porqué?

.....
.....

¿Que quiere del Proyecto?

.....
…….....

¿Sabe sobre el Parque Nacional de Sumaco?

Tuvo casa en este zona? Sí / No Busco allí? Sí / No