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**Community museums as potential instruments for
social change and sustainable development in rural
Mexico**

ANA CRISTINA LESHHER TREVIÑO

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Declaration of Originality

I, Ana Cristina Leshner Treviño, hereby certify that this thesis was written by me, except where otherwise acknowledged, and it is the record of a research project conducted by me within the Department of Humanities of Imperial College London.

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Abstract

Ecomuseums are innovative institutions in which new museological systems are used to conserve and interpret the tangible and intangible heritage of a defined geographical area and its corresponding community. Ecomuseums have a strong interest in public participation, in terms of both creation and subsequent development. Such institutions aim to establish an enduring dialogue between staff and community members and to influence positively the social and economic development of the locality.

This research focuses on two ecomuseums in rural communities in Mexico. I analyse the impact of both museums on their communities in terms of social improvement within statutes of sustainability. I look at their value in enabling environmental and cultural conservation; and I examine the various communication processes linking outside “experts” and community members.

The two museums tell markedly contrasting stories and show different processes of creation and community appropriation. The museum of San Juan Raya, located in a desert community in central Mexico, is a success story where an outside initiative was transformed into a beneficial community project largely run by local people. On the other hand the museum of Frontera Corozal, in the tropical jungle of southern Mexico, developed in a complex and fraught historic-political background, shows a much more problematic identity and no management continuity.

My research draws the conclusion that, assuming appropriate communication processes are established, ecomuseums have the ability to help to empower rural communities, to promote social change, and to implement successful techniques of conservation and management of natural resources. Although these two museums are of interest in themselves, this research considers and finds meaning in their different trajectories. The results of this evaluation are relevant to other worldwide communities setting up equivalent institutions, and may facilitate the understanding and development of community museums.

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Para mi mamá, mi mejor amiga y mi ejemplo a seguir

Para Luis y Xavi, los mejores compañeros de vida

Para Gael, mi rayito de sol

Para Kévin, mi amor

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Chapter I

A tale of two museums: introduction

*“The museum should encourage questions, stimulate discussion,
make people curious and arouse wonder”
(Schouten, 1989: p.243)*

In this first chapter I introduce the topic of the changing discipline of museology, give more detail about my project and begin to focus ever more closely on its specific questions. I will begin by stating the role community museums wish to take in relation to the wider history of exhibitions and display, and I rehearse the overall aims of the dissertation. I then provide a chapter outline, followed by both a statement of my research questions and a consideration of key definitions. I end this introductory chapter with a brief overview of the key case studies of my research, the communities of San Juan Raya and Frontera Corozal.

1.1. Personal statement

The idea behind the research that encompasses this PhD was born from my interest in the development of innovative ways to communicate science to the public through many different media as well as a strong social conscience. I am a young Mexican science communicator and I believe it is of high importance that science communicators diversify and strengthen their work, so that people from different social realities can take part in the communication process. Mexico presents an extraordinarily diverse and unequal society and therefore a challenge to science communicators, in this sense, activities to engage the public with science have to be very diverse and provided through as many media as possible. As I will discuss in this manuscript, science communication initiatives in Mexico are very centralized and focused to urban areas. There are practically no community museums with science subjects in rural areas.

I have thus a strong interest in investigating the development and actual functioning of these ecomuseums or community museums in rural communities in

Mexico, particularly their role in the conservation and sustainable development of natural resources and the protection of cultural heritage. I want to investigate how new museological approaches might be used to empower and benefit local communities and their environment. I chose community museums in Mexico because they represent a strong break from the scheme of the traditional museum, therefore are good examples of the New Museology movement.

Central to my thesis is the fact that Mexico has a very rich cultural and biological diversity. The country's territory is vast and diverse, and this has enabled the creation and development of different ethnic groups. Mexico is a multicultural country with more than 75 different indigenous groups that form 62 indigenous ethno-linguistic groups in Mexico (Warman, 2003). There are around 10 million indigenous people in the country, which make up around 10% of the nation's population (Fernández, *et al*, 2006). Each ethnic group has their own history, culture, traditions and language that define them. The majority of the indigenous groups are concentrated in the central and southern states of Mexico, which happen to be also the least industrialized and developed. The results of the 2005 Social Backwardness Index developed by the Commission for the Development of Indigenous Peoples show that most of the central and southern states of the country show high levels of social backwardness in the indigenous population.¹ Most of its people live in rural areas and communities.² These ethnic groups have their own languages (apart from Spanish, which in some communities in Mexico does not represent the mother tongue) and strong cultural values and traditions. They are communities possessing a strong sense of identity and a strong relationship with their environment that separates and makes them different from the urban population. The creation of community museums might enable people

¹ The Social Backwardness Index is calculated with the following indicators: illiteracy, school attendance and school drop outs, drainage, electric power, house floor, toilets, overcrowding in the house and the presence of some commodities such as television, fridge and washing machine. Comisión Nacional para el Desarrollo de los Pueblos Indígenas (National Commission for the Development of Indigenous Peoples), http://www.cdi.gob.mx/index.php?option=com_docman&task=doc_details&gid=158&Itemid=65. Accessed 3rd January 2014.

² Comisión Nacional para el Desarrollo de los Pueblos Indígenas (National Commission for the Development of Indigenous Peoples), http://www.cdi.gob.mx/index.php?id_seccion=91, accessed 29th August 2012.

from the poorest regions of the country to access, preserve and communicate their cultural and natural heritage.

Growing up in Mexico, I have been witness to the cultural differences of the people living in the different rural and urban areas in the country. The majority of these communities have no access to public services; people live in extreme poverty and receive little help from the government. I think it is absolutely essential that these people build a way to preserve their values and traditions and their relation with the environment, because these qualities are an important part of our legacy and identity as a country. It is also our duty to help them to do so. A relevant part of our patrimony is formed by our natural resources, which are essential to the wellbeing of the population, not only in environmental but also in economic and cultural terms, thus it is necessary to develop new ways to preserve and adequately use them. It seems only right that indigenous and ethnic groups, since they are living in close contact and have a strong relation with their environment, are regarded as actors in the development of conservation programs.

In this context, ecomuseums are very interesting initiatives that could represent an important force of action for improvement of the marginal living conditions of these communities. The successful creation and development of initiatives like these can help to implement successful techniques of conservation and management of natural resources. It is very important to assess how they are being carried out in Mexico and to provide potential ways of improvement.

Finally, I hope that the knowledge and experience acquired through this research will benefit other communities in other parts of the world but with similar social and environmental problematic and will provide data helping us to better assess ecomuseums or community museums in general terms.

1.2. The background

Museology is a dynamic discipline, reflecting the rich history of museums and their changing strategies for curating collections, attracting audiences, and engaging with wider publics. Museums have evolved from the private collections that formed the cabinets of curiosities of the 17th Century in Europe, to public organized collections that formed the grand national museums of art and natural history of the 18th and 19th Centuries (Arnold, 2006). A new phase of this change has seen museums, including large collections, smaller museums, and science centres, adopt new ideas and strategies generating a more effective inclusion by the communities around them (Kelly, 2006; Knell, *et al.* 2007).

One of the main revolutions in museology took place during the 1960s, with the rise of the *Nouvelle Museologie*: a series of ideas from French museologists and curators “...desperate to change the rigid structures of French museums” (Davis, 2011: p.61). This new movement wished to break away from old practices in exhibition development and communication with the public. In doing so, museum professionals started to reassess the role of the museums within society (Davis, 2011). Since then, museums have sought in many different ways to distance themselves from the idea that they are institutions that exist separate from the daily life of a community, a city or a country and have begun to establish themselves as centres of debate and interaction between people.

As a consequence of that shift in museum philosophy and practice, more museums now are looking at diverse ways of relating to their communities in a variety of ways and wish to re-invigorate their role as actors in social and economic development (Karp *et al.*, 1992; Knell *et al.*, 2007; Watson, 2007). Even if the image of the museum as an old, immovable institution persists, museums today are seen as public spaces aiding communication between experts and the public. The communication process is shifting away from a monologue in which the experts dictated what was being exhibited in the gallery to a dialogue, in which the opinions of the public are taken into account; to a form of communication where

the rituals of sharing and exchange complement the simpler mechanisms of knowledge transmission (Carey, 1989). This change in museum practice is transforming museums into places of social interaction and knowledge exchange, places of recognition of the heritage and rituals of a certain community.

This renewed emphasis in the community and the preservation and communication of local heritage is manifested by some of our best-known museums. For example, one of the most recognized science museums in the world that promote public participation is The Exploratorium, founded in 1969 in San Francisco, California. The Exploratorium is a museum dedicated to the public understanding of science and art. It makes special emphasis in its role as a teaching centre and develops exhibitions, workshops and activities based on an interactive approach to learning. It also offers a wide range of science programs for its community. A second example is the Cosmocaixa Science Museum of Barcelona, which opened in 2004 to become the first interactive science museum in Spain. As would be expected, Cosmocaixa values interactivity in its galleries and displays but, more radically, it aims to promote public participation in the development of exhibitions. It promotes engagement with science issues through workshops, special events, conferences and public lectures. And while the much-older Science Museum in London is an established centre for the exhibition of objects reaching back through the history of science and technology, it has for many years been a significant champion of interactivity. Its 'Launch Pad' gallery, opened in 2007, is a highly successful example of hands-on science and informal learning. For some years the Science Museum has also run a dedicated science engagement venue, known as the Dana Centre. It opened in 2003, a public event venue that organizes nightly contemporary science debates.

A recent addition to the roster of major museums dedicated to new techniques of participation is Science Gallery, a public science centre at Trinity College in Dublin, Ireland that opened in 2008. It does not have a permanent collection, but develops a series of temporary exhibitions each year based on the science related subjects in which the public are invited to participate, not only on side events, but also on the

construction of the gallery itself. Science Gallery also develops educational workshops, training programs and public events, and is now taking on an international presence, with venues due to open in London, Singapore, Bangalore, Melbourne and New York. A final, compelling example of significant investment in new forms of museum interaction with the public is the Wellcome Collection, in London. It opened in 2007, and has recently been expanded through a major refurbishment, with a re-opening set for March 2015. The Wellcome Collection has focused on exhibiting the interaction between medicine, life and art³ using mixed media and involving the audience through side events that encourage dialogue on recent medical advances and their relevance in everyday life.

Turning to community museums, they too are broadening their reach, as shown by the series of collaborative networks that now exist. In France, for example, the Fédération des Écomusées et des Musées de Société, was created in 1989 with the idea of building a network of initiatives seeking to promote conservation as the work of local communities⁴. Australia also has a Community Museum National Network, which provides briefing materials and carries out conferences enabling discussion on issues relevant to community museums. In addition, several countries in the Latin American region set up in 2000 the Red de Museos Comunitarios de América, a network of community museums that allows collaboration and joint action, and which takes a particular interest in giving voice to the marginalised peoples of the Americas. The countries forming this network are Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Mexico, Nicaragua and Panama.

Another important initiative of the New Museology movement has been the 'neighbourhood museum'. The world's first such museum is The Anacostia Community Museum in Washington D.C., where exhibitions document the history

³ For a description of the objectives and permanent and temporary exhibitions of the Wellcome Collection, as well as its activities with the public refer to <http://www.wellcomecollection.org/what-we-do/about-wellcome-collection> (Accessed 1st February 2015)

⁴ For more information on the objectives, exhibitions and other activities of this organization refer to <http://www.fems.asso.fr/> (Accessed 1 September 2015)

and community life in the Anacostia Neighbourhood, an historical African-American neighbourhood in the city of Washington. It was conceived as an experimental initiative of the Smithsonian Museum, and was founded in 1967, to attract a bigger diversity of audiences to museums⁵. Another renowned example of a neighbourhood museum is the Museo del Barrio in New York City. This museum's goal is to conserve and present the art and culture of Latin Americans living in the United States, most specifically in New York City. In addition to their permanent collection and temporary exhibitions they engage in a series of bilingual public programs, educational activities and festivals⁶.

The environmental movement of the 1970s proved to have a particularly critical influence in the development of *Nouvelle Museologie* and in the emergence of eco and community museums.⁷ Most current environmentalist practices recognize the importance of the involvement of the community and local "grassroots" action is the model to follow. Such museums also recognize the importance of community participation and differ from traditional museums both in their physical form and in their social role. For example, the community museum is not necessarily defined by its collection, but by the community it serves and by its location. Community museums are also not to be thought of as simply enclosed in a building: they are 'formed' by the community's relation with the area and its culture, and expand into the territory that the community occupies.

These museums, then, have an emphasis on conserving not only the object itself, but also its context and therefore its environment: the object gains additional significance because of the meaning the surrounding environment bestows upon it.

⁵ For more information about the history of the Anacostia Community Museums refer to <http://anacostia.si.edu/About/History> (Accessed 1 September 2015)

⁶ For more information about the history of the Museo del Barrio in New York City refer to <http://www.elmuseo.org/about/> (Accessed 1 September 2015)

⁷ In many Latin American countries – and in Mexico and Costa Rica in particular- many museums that adopted the ecomuseum title have abandoned it in favour of this more easily understood community museum label (Davis, 1999). In Latin American countries the "new museology" has a special emphasis to aid disadvantaged community development (Davis, 2008). Today "community museum" is the term most widely used in Mexico to refer to both community and ecomuseums, hence this is the term I will use the most during my dissertation.

(Simpson, 2009). Ecomuseums aim to conserve *in situ* and by doing so the conservation of the intangible, as well as the tangible, heritage becomes a central tenet in the philosophy of eco and community museums.

Community participation is at the heart of the ecomuseum philosophy. It is considered important that the museum is appropriated – ‘taken up’ – if the museum is to have success as an agent for social change. Community and ecomuseum philosophy therefore puts great emphasis on the participation of the local people in the conservation of a locality’s tangible and intangible heritage. As stated by Schouten: *“If the museum is to fulfil its social role, people should recognize themselves and their questions in the displays of the collection”* (Schouten, 1989: p.243).

Clearly the titles of eco and community museum summon up a very fluid series of concepts, and can be given to a wide variety of projects, with different objectives and practices. The ecomuseum is more a philosophical concept than a strict model to follow.⁸ Nevertheless several lists of characteristics that define the ecomuseum philosophy have been drawn up by many writers⁹ in order to stabilise, more precisely, the concepts and objectives of these institutions.

For example, the following ecomuseum features were proposed by Davis and Huang (2010). The ecomuseum should adopt a territory, which may be defined by a landscape, a cultural trait, an ethnicity, a language, or a specific industry. Through in-situ conservation and interpretation, ecomuseums seek to identify specific heritage resources within that territory. The act of conservation and interpretation is achieved by co-operation with other organisations. However, local people should lead the decision makers in terms of which aspects of their territory they would like to conserve and exhibit to the public: it is important, therefore, that the museum is managed by them. Empowerment of the community is an important

⁸ For an exhaustive review of eco museums around the world, refer to the work of Peter Davis (2011).

⁹ For example: Boylan, 1990; Hamrin & Hulander, 1995; Corsane, 2006a; Corsane *et al.*, 2007; Davis & Huang, 2010.

concept for ecomuseums – and this empowerment should have positive consequences. Benefits for the local people may be *educational and moral*, such as greater self-awareness or an increased pride in place, or *material*, such as the conservation of their resources, or *economic*, such as the creation of employment opportunities.

This thesis aims to examine two such ecomuseums. I will give a general overview of the literature regarding the subjects that are addressed in the analysis of this research, before turning to my two case studies, the museums of San Juan Raya and Frontera Corozal. The first part of the thesis comprises a literature review and a methodological outline, and aims to give the reader an understanding of the broader perspectives that can help us understand my chosen museums. In the first part of the thesis I also declare my research questions. The second part of my thesis is devoted to the interviews I conducted in the two communities that created and manage the museums. The final part of the thesis then analyses these initiatives in light of the ecomuseum philosophy and finally I draw last conclusions of the analysis of the case studies.

1.3 Summary of aims of the dissertation

The broad objective of my research is to assess the work and role of the community museums according to their philosophy and aims in two Mexican communities in rural areas. More precisely, the goal of this research project is to investigate these museums as instruments of social change. We have already seen that, in addition to the classic role of conservation and display of object, there is a contemporary agreement that museums should engage with the public, becoming social actors able to respond to social and economic problems. There is a conception that if museums are to remain relevant in today's society they need to respond to the desires, concerns, interests and needs of the community where they are located.

Firstly, I use a literary critique approach, in which I investigate several subjects that will serve as theoretical background to my practical work. The aims that lead my literature review can be summarized as follows:

- Exploring past and present practices in museology and how this discipline has been shaped by society.
- Understanding sustainable development and conservation in developing countries.
- Exploring the social, historical, economical and political context of Mexican society, especially in relation to indigenous communities. I will also explore colonialism and the development of Mexican museums.

Secondly, I carry out a case study approach, evaluating the work and role of two very different community museums in rural Mexico: San Juan Raya in the desert of central Mexico, and Frontera Corozal in the tropical Lacandon jungle in southern Mexico. The aim of my practical work is to analyse two community museums in Mexico. I look for evidence that the museums have acted as drivers of social change, and ask: how significant are these institutions in fostering the conservation of the natural and cultural heritage? I look too at the contribution the museums make to the everyday life of the community inhabitants.

A more thorough description of the theoretical frameworks and methodology used to achieve this aims in this research can be found in chapter two of this manuscript.

1.4. Research objectives and questions

My key research questions can be then summarized as follows:

- How fully do these community museums fulfill their aims¹⁰ in terms of the conservation, documentation and interpretation of the environment¹¹?
- In what ways do they contribute to the conservation of the cultural heritage¹² of the communities?
- Do they make a contribution to the improvement of everyday life in the communities? If so, in what ways are they helping the empowerment and sustainability of the communities¹³?

1.5. Chapter outline

This introduction has provided a general overview and the aims and objectives of my study, but presents also my research questions as well as certain definitions, and an outline of my case studies. The structure of the rest of my dissertation is as follows.

Chapter two introduces the theories and qualitative research techniques by which I drove and shaped my research. In this chapter I also give a descriptive account of the methodology I used to answer my research questions.

The background of my research involves a number of distinct areas: they include the history of museums, the new museology, the environmentalist movement and the state of rural and indigenous groups in Mexico. This is a broad treatment, and I therefore group the elements of my literature review into three overarching themes – and three chapters (chapters three, four and five).

¹⁰ The stated aims of the museums are listed in section 1.7 of this chapter, page 32.

¹¹ I will abide by the definition of environment given by the Oxford dictionary which states that: the environment is the natural world, as a whole or in a particular geographical area, especially as affected by human activity

¹² For the definition of “heritage” used refer to page 22.

¹³ For the definition of “sustainable development” and “empowerment” refer to page 24.

Thus, chapter three examines the origins of museums and their shifting character over time, as they respond to the social and political context in which they are embedded. For example I explore the role of museums in colonial contexts; and I look at the influence that public participation has had on museological philosophy and practice.

Chapter four in turn explores the subjects of conservation of the environment in developing countries; the place of indigenous peoples in conservation in natural reserves; and the rise of the environmentalist movement in the 1970s and its influence on museum culture. The final subject that this chapter touches is the creation of new institutions such as eco and community museums.

This thesis has Mexico as an important background against which my two case studies must be viewed. I therefore use chapter five to give a general view of the Mexican social and political context, specifically in relation with indigenous groups. This background chapter also focuses on the literature that concerns the phenomenon of Mexican community museums. Finally, this chapter turns to the discussion of museums as agents of social change, as vehicles for the empowerment of their surrounding communities, and as organisers for the conservation of the environment and cultural heritage. Overall the aim of these three review chapters is to root my study in a general understanding of the several areas of knowledge that form the background of my study, and to select and discuss particular issues I consider of particular relevance.

In Chapters six and seven I present the two museums that make up my case studies; and using quotes and commentary I present my results, and my analysis of their meaning. Chapter eight is a further discussion of the results, relating them in particular to broader scholarly indicators that define success in ecomuseum philosophy and practice. Finally, chapter nine is devoted to my concluding remarks on the findings of my research, and I explore future directions for this field of study.

1.6. Key concepts definitions

In the following chapters I will be working from several concepts that are relevant to my research, and I define them here.

Heritage

The concept of heritage is important to my research, given that I aim to examine in which ways community museums are important actors in the conservation of the natural and cultural heritage.

It was in the 1972 World Heritage Convention, that for the first time both cultural and natural heritage were considered in the definition given by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Council on Monuments and Sites (ICOMOS), which *“have been in the forefront in defining common terminology and scope of heritage since 1965”* (Ahmad, 2006: p.294)

At this convention, the definition of cultural heritage by UNESCO included monuments, such as architectural works, monumental sculpture and painting, elements or structures of an archaeological nature, groups of buildings, sites works of man or the combined works of nature and of man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view. On the other hand, the definition of natural heritage included physical and biological formations, geological and physiographical formations and habitats of threatened species with outstanding universal value from the point of view of science, conservation or natural beauty.¹⁴

¹⁴ Convention Concernant la Protection du Patrimoine Mondial, Culturel et Naturel 1972. Available at http://portal.unesco.org/fr/ev.phpURL_ID=13055&URL_DO=DO_TOPIC&URL_SECTION=201.html Accessed 10th April 2013.

However, recently scholars such as Laurajane Smith a professor of heritage and museum studies at the Australian National University, argue that UNESCO's definition legitimises a particular Western view of heritage in terms of policy and practice (Smith and Akagawa, 2009). Smith (2006) challenges UNESCO and ICOMOS definition, which she calls the "authorized heritage discourse" and declares that "heritage is a multilayered performance... that embodies acts of remembrance and commemoration while Constructing a sense of place, belonging and understanding in the present" (Smith, 2006:3) She then, argues that heritage should be better understood as a discourse that encompasses a "set of cultural practices that are concerned with utilizing the past for creating cultural meaning for the present" (Smith, 2015:459)

Smith's definition of heritage chimes specially well with ecomuseum theory, specially in terms of the malleability of the concept, which adapts well to the many examples of ecomuseum practice around the world. It is then, Smith's previously quoted ideas that I will refer to in this research.

Participation

The participation of the community is one of the subjects relevant to my research. The term 'participation' is used in this dissertation to refer to the process of sharing in those decisions which affect one's own life and the life of the community in which one lives.

Appropriation

As one of my research questions is to investigate the extent to which the community has made a museum project 'their own', and to analyse how that process developed, the term 'appropriation' is used frequently in my writing. By appropriation I mean the takeover by the community of the museum as a shared vision – a takeover achieved by the assumption of control, management and responsibility of the museum.

I take this concept from the work of Teresa Morales, a Mexican museographer who specializes in community museums. Morales (1996) argues that a community appropriates a museum to the degree to which it exercises power over it.

Sustainable Development

In this research I aim to discover whether these museums do have a role in the conservation of the environment and a sustainable use of the resources of the community.

The Brundtland¹⁵ Commission, officially named the 'World Commission on Environment and Development', published "Our Common Future" in 1987¹⁶, in it they coined the definition of sustainable development that remains the most cited today and the one I will use in this research.

Their definition states that:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
(World Commission on Environment and Development, 1987: p.43)

Empowerment

Another of my research questions is whether these initiatives are tools to empower the community. One of the definitions of empowerment that best illustrates the objectives of this research was formulated by Deepa Nayaran:

¹⁵ The Brundtland Commission takes his name after the former Prime Minister of Norway, Gro Harlem Brundtland,. In 1983 she was asked by the United Nations Secretary General to create an independent commission to focus on environmental and developmental problems, and to consider solutions to them.

¹⁶ The Brundtland Report was published by Oxford University Press in 1987. An online version of the document is available at <http://www.un-documents.net/wced-ocf.htm> (Accessed, 11th May, 2013).

“Empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives.” (Nayaran, 2005: p.5)

I will use this definition, because it encompasses not only to the participation of the community in any given project, but it also implies decision making and ownership of the project – the acquisition and fair distribution of power - subjects that very relevant to the pursuit of my research.

1.7. Brief overview of case studies

As briefly mentioned earlier, my research focuses on two community museums in rural areas of Mexico. The Community Museum of Palaeontology of San Juan Raya is located in the central state of Puebla in a small community called San Juan Raya. This community is located in the Valley of Tehuacán, within the Natural Biosphere Reserve Tehuacán-Cuicatlán, which is located in the southeast of the state of Puebla, 150-km southeast of Mexico City, in the geographical centre of the country. Inside the territory of San Juan Raya lies one of the most important fossil sites in the country.

This region is home to people from eight different ethnic groups. It possesses also a high diversity in terms of flora and fauna. However, the arid zones of the reserve suffer a good deal of marginalisation and are amongst the poorest areas in the country. Electricity arrived in the community of San Juan Raya only ten years ago. There is no running water, gas supply or mobile or fixed phone reception. The village has around 240 inhabitants. There is a primary school in the community, with only one teacher giving lessons in all subjects to children of the community. Those wanting to attend secondary and high school must travel at least one hour on an unsurfaced road to reach it. The community has a modest church, a police station and two shops that sell diverse food items.



Figure 1¹⁷. (A) The church of San Juan Raya. (B) A touristic path runs through the lands of the community. (C) A view of the cactus diversity of the Valley of Tehuacán-Cuicatlán. (D) Children of the community form a line to enter the school.

In 1998 the Mexican government instituted the reserve in which the community lies. From that time there have been some restrictions on the economic activities and extraction practices of natural resources that were traditionally practiced by the indigenous groups.

Given that the community of San Juan Raya is in a very arid area that does not allow many agricultural activities, the fossil and plant trade has always been an important form of subsistence. People from the community, therefore, were quite used to exchanging fossils or cacti for money, food or clothes. In the particular case of San Juan Raya, the establishment of the reserve set restrictions on local people's exploitation of these resources. This restriction on trade was the catalyst for the beginning of the museum, which was built as a way of exhibiting the fossil and

¹⁷ All photographs in this manuscript have been taken by me during my visits to the communities of Frontera Corozal and San Juan Raya, unless otherwise stated.

faunal richness of the area. This allowed the community to make a profit directly from their resources without participating in illegal actions.



Figure 2. (A) Children of the community of San Juan Raya. (B) A view of the single classroom in the school of the community. (C) A woman makes “tortillas” in the kitchen of her house (D) Children of the community playing.

My interviewees in this community museum included members of the community that have been involved with the museum since its creation, members of the community that hold an administrative position of communal goods, representatives for the guided tours and the person in charge of the visitors to the museum. I interviewed the schoolteacher of San Juan Raya, who is not native from the community. I also interviewed Dr Alfonso Valiente, a Mexican researcher working on Mexico’s National University in Mexico City. He is the principal investigator at the Community Ecology research group at the Institute of Ecology in Mexico City. Dr Valiente has been studying ecological interactions in the Valley of Tehuacán-Cuicatlán for more than 30 years. The research group that he leads has been strongly involved in developing the community museum in San Juan

Raya. I have also interviewed two junior researchers that are part of his team and that have been active participants in the project of the museum.

The second case study is a museum embedded in a small community called Frontera Corozal in the southern state of Chiapas, right on the border with Guatemala and nearby the ancient Mayan ruins of Yaxchilán. The community of Frontera Corozal is situated in the Lacandon Jungle, the northernmost tropical rainforest in the American continent. This tropical jungle is one of the most biologically diverse areas in the continent. It is also a region of high cultural diversity, inhabited by many different ethnic groups. Furthermore, this region has been witness to many conflicts between the government and the indigenous communities.

The municipality that Frontera Corozal belongs to has high rates of poverty. Around 4,000 people live in this community. None of the roads are paved; there is no mobile or landline phone reception and no gas supply. However, they do have electricity and running water. The community has two schools: one primary and one secondary.

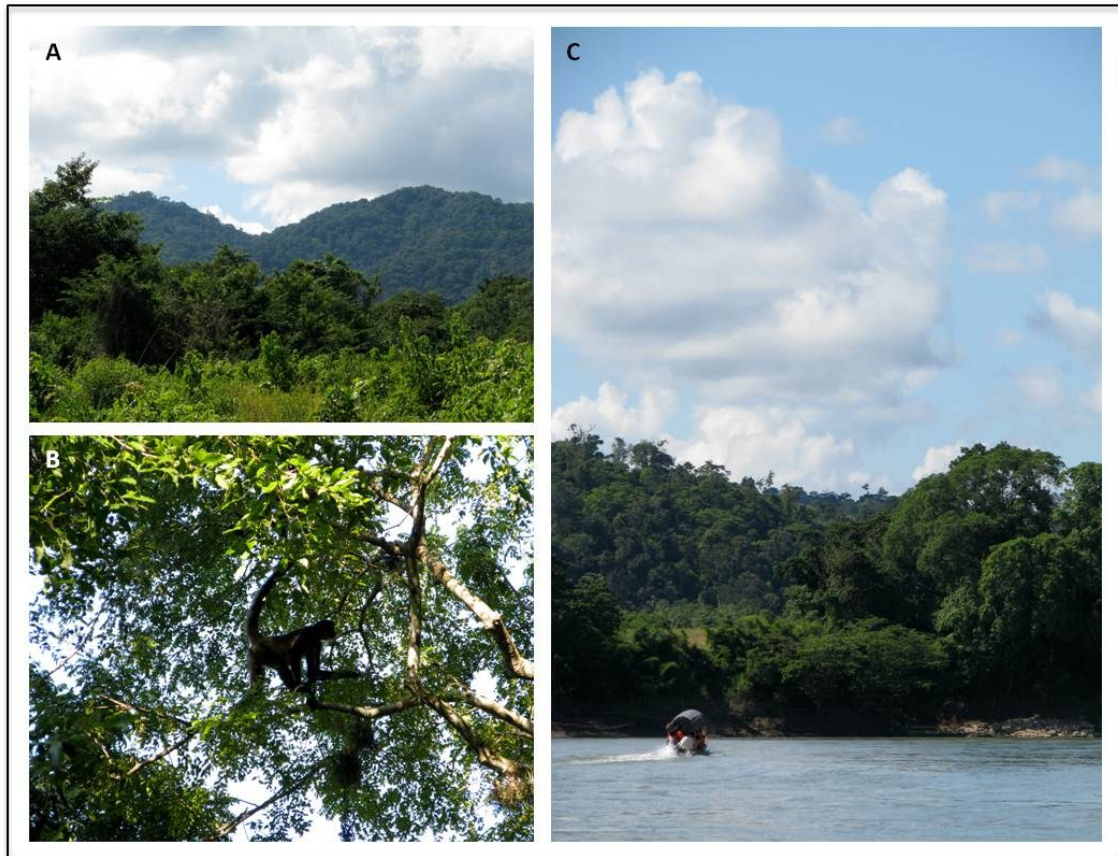


Figure 3. (A) Panoramic view of the Lacandon jungle. (B) The Lacandon Jungle is home to a big population of spider monkeys (*Ateles geoffroyi*). (C) The Usumacinta River that divides the Mexican state of Chiapas and Guatemala.

In 1976 the community of Frontera Corozal was established *de novo* with displaced people of the Ch'ol ethnic group: as we shall see, this is an important factor in understanding the eventual emergence of the community museum. The Ch'ol people, who are of Mayan descent, were relocated from their lands because their ancient territories were part of the Montes Azules Biosphere Reserve. When the government established this reserve they gave the right to inhabit its lands solely to the Lacandon ethnic group, causing the displacement of people of other ethnicities (the Ch'ol, the Tzeltal, the Tso'tsil and the Tojolobal). These people were relocated to other parts of the Lacandon Jungle that were outside of the nucleus of the reserve.



Figure 4. (A) A house in the community of Frontera Corozal. (B) A girl from the community outside her house. (C) A boy looks out the window of a minibus in the community.

The community museum was created in 2001 on the initiative of the community. Local people set up the museum in order to conserve and display the archaeological pieces that were found on their lands. The museum started by exhibiting these archaeological pieces belonging to ancient Mayans and had a room dedicated to the history of the community. Subsequently, with collaboration of biologists and researchers of the National University of Mexico, a gallery on the biodiversity of the Lacandon jungle and a botanical garden were added to the museum in 2004.

My interviewees in this community museum included members of the community that have been involved with the creation of the museum, members of the community that hold an administrative position within the museum's committee, as well as persons employed by the museum to carry out maintenance tasks. I interviewed Florencio Cruz, a community member that studied a bachelor degree in Biology and is now an advisor for the museum committee. I also interviewed Dr Elena Alvarez-Buylla, a researcher from Mexico's National University in Mexico

City. She is the principal investigator of a research group that researches molecular genetics, development and evolution of plants and a professor in the Functional Ecology Department of the Institute of Ecology in Mexico City. She has been studying the flora in the lands of Frontera Corozal for many decades. During the past years she has been collaborating with the community to refurbish the biodiversity gallery and to create the botanical garden of the community museum of Frontera Corozal. I interviewed Alma Delia de los Ríos, an architect that was also involved in the museum project. I have also interviewed Esteban Martínez, a researcher from the Institute of Biology in Mexico City. He has been researching the flora of the Lacandon Jungle for more than 30 years and has been in close contact with the community. Finally I interviewed Dr Fernanda Figueroa a researcher from the National University in Mexico City. She has carried out extensive anthropological investigations in the communities that inhabit the Lacandon Jungle.



Figure 5. Map of Mexico indicating in red the geographical position of the two communities of San Juan Raya in the state of Puebla and Frontera Corozal in the state of Chiapas.

1.8. Stated aims of the museums

The broad objective of this research is to investigate, both through theoretical and practical work, whether the museums of San Juan Raya and Frontera Corozal, located in two rural communities in Mexico, fulfil their goals. In this section I will describe the stated aims of these museums.¹⁸

The objectives of the community museum of Palaeontology of San Juan Raya are:

- The museum should become an instrument by which the community organizes, administers and receives professional training to show the biological attributes of the region, focusing mainly on the extensive fossil remains.
- The museum should be a cause of the better use of local natural resources, encouraging sustainable development and improving the wellbeing of the community.
- The museum should improve the education standards of the community.
- It should constitute an aid to the conservation and communication of the cultural and natural heritage of San Juan Raya.

The objectives of the community museum of Frontera Corozal are:

- To contribute to the preservation, restoration and interpretation of the artefacts and cultures of the communities of the region.
- To carry out public programmes of informal education.
- To be a catalyst for the conservation and sustainable use of the natural resources of the community.
- Overall, to pursue with vigour and responsibility the preservation of the museum's objects and the cultural and natural heritage they embody. The preservation of these objects is essential for the maintenance of cultural

¹⁸ The stated aims presented here are translated from official documents of the museum provided by members of the community in personal communications. I was kindly given a copy of this documents by Dr Alfonso Valiente for the case of San Juan Raya and Dr Elena Alvarez-Buylla for the case of Frontera Corozal.

identity, and for the continued ethical values of the community and of the harmonic relation that the Mayan ancestors had with their natural environment.

In the following chapters of this research I will discuss the literature that is relevant for the analysis of these community museums, from museum studies to colonialism, from sustainable development to environmentalism in museum. I will also give a social, political and historical overview of indigenous groups in Mexico and the development of community museums.

I will then answer the question of whether these museums fulfil these stated aims and in which ways they relate to ecomuseum philosophy and practice.

Chapter II

Theoretical frameworks and methodology

In the previous chapter I have given a foreword to the broad subject of eco and community museums as well as a summary of the aims of this study and an introduction to the research questions of this investigation. I will now address the theoretical frameworks that have influenced the methodologies I carry out in order to answer the research questions. Later on, this chapter outlines the methodological procedure and discusses the types of interviews selected, the sampling strategy and the transcription and translation of the interviews. Finally, I will discuss my approach to the coding process and analysis of the results.

2.1. Qualitative research

Qualitative research techniques¹⁹ have been traditionally associated with a type of research centred in attitudes, perceptions, beliefs, feelings, visions, motivations and other subjective and abstract elements. Moreover, qualitative research has conventionally been related only to certain approaches and phases within social research. The capacity of these methodologies to obtain a considerable amount of detailed information and to explore the connections between factors gives them validity, making them especially useful to face situations of which we have little previous knowledge (Valles, 1997).

Previous to my fieldwork experiences I had only an approximate idea of the issues I was going to face during data collection and analysis for this research. In this sense qualitative research, which offers the possibility to face data with an openly interpretative approach, seemed more suitable for my research. Qualitative research techniques also suit the objectives of my research given that I aim to focus on the meaning of discourse, to identify recurrent themes within the data (Flick 2002; Silverman 2005), which will lead my analysis.

Qualitative research has been associated with representation issues given that they often call on small sample sizes. The fact that qualitative research is often centred in the study of single cases in a reduced geographical space and in a certain period of time, has been regarded as a limitation for this methodology (Burawoy *et al.*, 1991). However the growing development of methodologies within qualitative analysis is arguing against this view (Bryman & Burgess, 1994).

There are a number of theoretical frameworks within qualitative research methods that have influenced my research. I have not used each of the following theoretical positions entirely, but I have taken some aspects of each of them in the development of my methodology. Following John Law's (2004) idea of the use of a

¹⁹ For general information on qualitative research techniques, see Bryman, A. and Burgess, R. (1994) and Hakim, C. (1987).

“messy” methodology assemblage in order to explain a “messy” reality I have used different qualitative research methods to create a methodology well suited to my research questions. In the next section I will briefly discuss each before proceeding to a deeper explanation of the method I followed.

Grounded theory

This methodology is the most thorough and one of the most predominant in qualitative research. According to Flick, grounded theory “*has been a major input to the development of qualitative research as an approach*”, “*has provided several tools for doing qualitative research*” and offers “*an integrative approach on how to do qualitative research*” (Flick, 2002: p.428)

Its objective is not centred in the testing but in the elaboration of the theory. Grounded theory was described by Glaser and Strauss (1967) and expanded upon by Strauss and Corbin (1998), who describe it as a theory that emerges from data that is systematically gathered and analyzed. In a definition proposed by Hood (2007) the resulting theory is developed inductively from data, rather than tested by it, and that this emerging theory is being also refined and tested by data (Hood, 2007).

According to Strauss and Corbin, the validity of this theory lies in the fact that:

“Theory derived from data is more likely to resemble the “reality” than is theory derived by putting together a series of concepts based on experience or solely on speculation.” (Strauss and Corbin, 1998: 12).

The type of process that grounded theory proposes responds to several phases²⁰. The first step would be the elaboration of a preliminary categorization of the data through the comparison of the cases in which the research is focusing. This process is called open coding and in its categories, information about characteristic, conditions, components of the studied phenomenon are gathered through the

²⁰ The following description of the steps required to develop a grounded theory are taken from Strauss, A. and J. Corbin, (1998).

study of several cases. It is an open and provisional interpretation of data through the use of note codes. After this, the categorization of data articulates itself around central categories (core categories), which tend to reduce their number, through fusion and rejection. It is in this way that categories begin to be more concrete and robust and the research subjects, which were very open at the beginning, close and organize themselves around stable categories, which in turn hold the information of the data. This coding process is also an analysis process, since phenomena and its characteristics are being identified by questions and comparisons, which have their answers in the gathered data. The next step is the organization of these elements by establishing connections between core categories (axial coding). The result of this integration process is the construction of a new theory.

From this method I took the emphasis on coding, grouping, comparing and connecting codes while simultaneously analysing data to produce a theory. However, and in this sense I will agree with the notion of Law (2004), who claims that there is no “neutral” researcher. I will not claim to have approached my data theory-free, since I had a notion of the ideas I wanted to test and of the subjects I wanted to address in my interviews and the issues I thought were relevant to explore in order to answer my research questions.

Ethnography

Context is of great importance for the understanding of a process; anthropologists usually argue that if one is really to understand a group of people or in order to comprehend the context of a social phenomenon, one must engage in an extended period of observation (Silverman, 2006). According to Baszanger and Dodier (2004) ethnographic studies must satisfy three requirements. First of all is the need for an empirical approach, because the studied phenomena cannot be deduced from theory only. Secondly is the need to remain open to elements that cannot be codified at the time of the study. Thirdly is the concern for a framework that describes the phenomena observed in the field. I believe my research contains those three elements that ethnographic research addresses.

The use of empirical observation is relevant for my research since the questions I aim to answer ask how fully these ecomuseums or community museums fulfil their claimed role of conservation, documentation and exhibition of the environment, and how they contribute to the conservation of cultural heritage of the community and ultimately whether they constitute a tool for social change. Given that those issues have to do with the daily life, cultural habits, experiences and understandings of the community I have decided to adopt observation as an important part of my research methodology.

Based on the understanding that ethnography is the study of people in naturally occurring settings by methods of data collection, this data will capture their social meanings and ordinary activities and involves the research participating in the setting in order to collect data (Brewer, 2000).

Ethnography focuses, as does grounded theory, on not imposing theory or hypotheses on the object of study, but instead relies on an in-depth description that can also be found in participant observation; it is a useful tool in identifying important issues and enables the researcher to focus their investigation. According to Silverman (2006) participant observation, ethnography and fieldwork are all used interchangeably, they can all mean spending long periods watching people and engaging in conversation about their activities, feelings and thoughts. Silverman (2006), states also that in fact all social research is participant observation, because we cannot study the social world without being a part of it.

Hence, I decided to complement my interviews with observations on the daily life of the community. The use of this methodology allowed me to get closer to the community's reality in order to experience their understanding of the world as much as possible (Delamont, 2004; Silverman, 2006) and identify important issues in their discourse. Moreover, this close contact with community members will also help me to build rapport, a key element in the in-depth interviews I carried out.

From this methodology, I will adopt for my research the four features that Atkinson and Hammersley (1994) describe. The first one states that ethnography has a strong emphasis on exploring the nature of particular social phenomena, rather than setting out to test hypotheses about them. Secondly, this field has a

tendency to work primarily with “unstructured” data (data that has not been coded at the point of data collection in terms of a closed set of analytic categories). The third feature states that ethnographic research focuses on a small number of cases, maybe just one in great detail. Finally, the analysis of data involves explicit interpretations of the meanings and functions of human actions and that verbal descriptions and statistical analysis play a subordinate role.

Traditional museum evaluation vs ecomuseum evaluation

As mentioned earlier, the objective of this research is to answer how these two rural community museums in Mexico fulfil the tenets of an ecomuseum, especially with regards to conservation, documentation and exhibition of the environment. I aim to examine also the ways in which they contribute to the conservation of cultural heritage of their communities. In addition, I examine whether these institutions contribute to the empowerment and sustainability of the communities, with the aim to see their potential as instruments for social change.

Traditionally the evaluation of an exhibition allows museum staff to investigate the opinion of the public and can be carried out in different stages of the development of the exhibition. As defined by Screven (1993), the traditional evaluation of an exhibition is the systematic assessment of its value with the purpose of decision-making in terms of its relevance or to make any changes towards improvements in its application. Screven (1990) proposes an evaluation based on five stages of the evolution of an exhibition: planning, design, construction and installation, occupancy and remedial (Screven, 1990: p.37). All these evaluations are typically undertaken through the use of questionnaires, structured interviews, commentary boards directed to the visitors, both before and after their visit to the museum.

Miles (1994), opposes to the scheme proposed by Screven, and argues that evaluation should only answer to the questions of when the assessment is taking place and what is being evaluated, removing the purpose from the definition. He simplifies the scheme of evaluation and proposes three stages instead of five. Miles (1994) proposes the same methods to carry out the evaluations as Screven (1990).

So, what Miles proposes is a simplified version of Screven, but essentially keeps the same elements in the analysis of an exhibition.

However, the evaluation of a participatory project, like the case of eco and community museums among others, cannot be carried out in the same way. Nina Simon, author of "The Participatory Museum" (Simon, 2010) states that the absence of a well-established method of evaluation of participatory projects in museums is a contributing factor to their lack of acceptance and use in the field. She affirms that traditional methods of evaluation, i.e. surveys, questionnaires, interviews, are useful as well for participatory projects, however given that participatory projects are sometimes more about the process than the result and involve actions and behaviours that are not part of the visitor experience in traditional museums it is imperative to make sure that tools for evaluation reflect and measure these experiences (Simon, 2010).

The broad objective of this research is to assess the work and role of the community museums according to their philosophy and aims in two Mexican communities. It may seem logical not to follow the traditional museum evaluation that I have described at the beginning of this section. Since the focus of this research has less to do with the value of the exhibition in the eyes of the visitor, and more to do with the question of whether these institutions fulfil the role they claim for themselves in the community, i.e. their importance in the conservation of the natural and cultural heritage, their role in the social improvement of the community and the claim to constitute institutions born from the needs of the communities.

As I have mentioned in the introduction of this manuscript, the title of "ecomuseum" encompasses a wide range of projects. In an attempt to establish a set of characteristics that could be used for the assessment of philosophy and practice of ecomuseums academics have attempted to enlist some key features that these institutions should have to bear the title. Hamrin and Hulander (1995) enlist 18 characteristics. Among these, they suggest an ecomuseum should physically cover a large area, conserve and interpret features of the cultural landscape in situ, involve the visitor and promote cultural tourism and be managed by cooperation

between local authorities, associations and organisations, individuals and companies. Ecomuseums should also help local people to praise and reflect on their cultural identity. Hamrin and Hulander (1995) describe ecomuseums as dynamic institutions that have a “holistic” interpretation of places, in which local artists, craftsmen, writers, actors and musicians collaborate. Finally, they mention that ecomuseums should also encourage research and have the goal to illustrate the bonds between technology and the individual, nature and culture and past and present.

However, as Corsane and collaborators (2007) noticed, although Hamrin and Hulander mentioned the landscape as an important part of the ecomuseum, they made little reference to the importance of the environment in which the institution lies:

“...to the natural environment, to the need for distinctiveness within the geographical area, to the past or contemporary environmental issues, to the role of living collections or to the nature of the collections that ecomuseums care for.”
(Corsane, et al, 2007: 102)

Recognizing the value of the environment and amending the shortcomings of Hamrin and Hulander’s list Davis (2011) proposes a series of indicators that should feature in ecomuseums. The ecomuseum should appropriate a territory, which is not necessarily going to be defined by political boundaries, but by features such as the landscape, a language or dialect, a specific industry or a tradition. There should be an identification of specific heritage resources within that territory and they should be celebrated using in-situ conservation and interpretation, which should be carried out via liaison and co-operation with other organisations (Davis, 2011).

In addition, Davis mentions that the empowerment of the local community is essential to the ecomuseum philosophy. These institutions should be established and managed by local people. Local people should decide what aspects of their territory are important and should have a representation in the museum. Communities should also benefit from the establishment of the museum. These benefits can be intangible, tangible or economic (Davis and Huang, 2010).

Apart from Professor Peter Davis, another leading commentator of ecomuseums is Gerard Corsane, senior lecturer in heritage, museum and gallery studies at Newcastle University, who, after a review of the literature related to ecomuseums has identified, along with his collaborators, a list of 21 indicators which tend to characterise individual ecomuseums and can be used for their evaluation (Corsane, 2006a)²¹. He states that, given the variety of projects that fall into the ecomuseum category, no two museums will present all of the same indicators, but that since each institution is unique, it will also present a unique configuration of the indicators in varied proportions. According to his description, indicators

“1 to 6 focus on the democratic and participatory nature of ecomuseums, 7 to 12 deal with what an ecomuseum includes and covers, and 13 to 21 centre on what an ecomuseum can do and the approaches and methods often used in ecomuseology” (Corsane, 2006b: p. 219).

I decided to use this methodology proposed by Corsane (2006a), in the evaluation of how deeply these two community museums in rural Mexico fulfil the tenets of ecomuseums. The list of indicators proposed by Corsane encompasses elements of different lists of attributes of the ecomuseum philosophy (see of Boylan, 1992; Corsane and Holleman, 1993; Hamrin and Hullander, 1995 and Davis, 1999) and therefore provides the most complete characterization of the key elements an ecomuseum should have.

I did not, however, use all the indicators that he proposes and focused on the ones that are displayed by the museums I am analysing. I also changed some of the terminology he uses, I replaced the verb “allow” by “encourage” in the second indicator, because I believe that the role of the ecomuseum should not only allow public participation but it needs to actively attempt to engage all interested groups in all decision-making stages of the process of creation of the ecomuseum. In addition, I rephrased indicator fourteen because I think the use of the concepts is vague, the author does not clarify what he means by “development for a better

²¹ Corsane points out that these indicators are mainly based on the work of Boylan, 1992; Corsane & Holleman 1993; Hamrin and Hullander, 1995 and Davis 1999.

future”. Instead I added the concept of community empowerment and I will abide by the definition I gave in the introductory chapter of this thesis.

The following table is adapted from (Corsane, 2006a: p.405) and presents the indicators that I will be using in the analysis of the case studies.

Table 1. Ecomuseum indicators used in this study based on the work of Gerard Corsane(2006a: p.405)

An ecomuseum will
1. Be initiated and steered by local communities
2. Encourage public participation from all the stakeholder and interest groups in all the decision-making processes and activities in a democratic manner.
3. Place an emphasis on the processes of heritage management, rather than on heritage products for consumption
4. Encourage collaboration with local craftspeople, artists, writers, actors and musicians.
5. Depend on substantial active voluntary efforts by local stakeholders.
6. Focus on local identity and “sense of place”.
7. Encompass a “geographical” territory, which can be determined by different shared characteristics.
8. Cover both spatial and temporal aspects, where, in relation to the temporal, it looks at continuity and change over time rather than simply trying to freeze things in time.
9. Takes the form of a “fragmented museum”, consisting of a network with a hub and antennae of different buildings and sites.
10. Promotes preservation, conservation and safeguarding of heritage resources <i>in situ</i> .
11. Gives equal attention to immovable and movable tangible material culture, and to intangible heritage resources.
12. Stimulates sustainable development and use of resources.
13. Allows for social change and empowerment.
14. Encourages an on-going programme of documentation of past and present life and people’s interactions with all environmental factors (including physical, economic, social, cultural and political).
15. Promotes research at a number of levels- from the research and understanding to local “specialists” to research by academics.

16. Attempts to illustrate connections between technology/individual, nature/culture, and past/present.
17. Provide for an intersection between heritage and responsible tourism.
18. Bring benefits to local communities, for example, a sense of pride, regeneration and/or economic income.

From the above list of characteristics of ecomuseums, it is clear that these institutions have functions, roles and aims very different from those of traditional museums, which is why a classical evaluation, as proposed by Screven (1990) and Miles (1994) would be inadequate for my particular research.

Another valuable source of ideas for the evaluation of ecomuseums has been the work of Borrelli and collaborators (2008) from the Istituto di Ricerche Economico Sociali del Piemonte, Italy. Their work examines a suitable methodology to evaluate the value that ecomuseums have in their communities and in this regard and have recently published a highly interesting handbook (Borrelli *et al.*, 2008). This handbook, called the *MACDAB method*, is designed to be a tool for the auto-evaluation of communities who set up and manage ecomuseums. It focuses on three main areas: *participation*, *strategy* and *management* of heritage resources. The methodology proposed in the manual indeed recommends the use of questionnaires, and aims to enable people involved in the museum to evaluate how closely it satisfies ecomuseum criteria and also encourages them to build up key values of ecomuseum philosophy, such as the preservation, the conservation and interpretation of heritage resources, the participation, the empowerment and community involvement and the use of heritage to aid local sustainable development. The use of questionnaires might seem like a traditional way of museum evaluation, however, instead of focusing on public's appreciation or the translation process of the curators, the handbook's themes are aimed at the members of the community themselves, whether they are managing the museum or not, to assess the impact the museum is having in various layers of the community. The MACDAB method proposes an evaluation that will aid ecomuseums to recognize their own kind in the ever-changing and

confusing arena of modern museology, to have more authority and credibility as a group and to make their performance more effective (Borrelli *et al.*, 2008: p.6)

The very interesting issues and analyses introduced in this handbook are relevant and appropriate to the objectives of my investigation and I therefore decided to use some of the proposed questions in the structure of my interviews. Nonetheless, as I wanted to have more in-depth knowledge of the processes happening in the community and the role of the museum within it, I did not follow the survey-like analysis that they propose, but instead decided to use qualitative interviews to fulfil my research objectives.

2.2. Mode of Enquiry

The main aim of my research is to perform a theoretical and practical evaluation on the eco- or community museum implications based on the two community cases presented below. Firstly, I aim to perform an evaluation, through the use of interviews and ethnographic observations, to assess whether these museums satisfy their original goals. Secondly, I will assess in parallel the impact of ecomuseums on the community life and the surrounding environment.

Thus, my main research questions are:

- How fully do these community museums fulfil their aims²² in terms of conservation, documentation and exhibition of the environment²³?
- In what ways do they contribute to the conservation of cultural heritage²⁴ of the communities?
- Do they make a contribution to the improvement of everyday life in the communities? If so, in what ways are they helping the empowerment and sustainability of the communities²⁵?

²² The stated aims of the museums are listed in chapter 1 page 32.

²³ I will abide by the definition of environment given by the Oxford dictionary and which states that: The natural world, as a whole or in a particular geographical area, especially as affected by human activity.

²⁴ For the definition of “heritage” used in this research refer to chapter 1 page 22.

²⁵ For the definition of “sustainability” and “empowerment” refer to chapter 1 page 24.

While the primary theoretical research focused mainly on reading the relevant literature on the ecomuseums development and related issues, the practical research is applied on two community museums in Mexico.

Selection of case studies

In my opening statement (see page 10) I mention that my interest to research ecomuseums was born from the idea that these institutions could be good alternatives to communicate science to the public, among other things. This is especially important in a country like Mexico, a country with a high index of poverty and inequality, while being extraordinarily diverse and rich culturally. Thus, in order to investigate whether ecomuseums could be innovative alternatives to engage the public with scientific issues I chose to focus on community museums that were presenting scientific or environmental content in their galleries.

In order to choose the sites I did an online and literature search of community museums with scientific content. Unfortunately, as I will discuss later, science communication initiatives in Mexico are very centralized and there are not many community museums with scientific or environmental content. This left me with little choice of case studies. I was interested to have case studies situated in very different parts of the country in order to allow me to explore how the ecomuseum ideal could adapt to two contrasting economic, geographical and social circumstances. After careful review of time frame and resources for this study I chose to focus on only two sites.

During the process of site selection I also had to consider the issue of accessibility to the communities, both in terms of reaching the site and being accepted by the community members. I finally chose the two case studies I introduced in the first chapter of this manuscript because they were accessible and because I knew researchers that were already working there and could introduce me to the community members.

One of these two museums is located in the central state of Puebla in a small community called San Juan Raya (refer to map in the Introduction chapter, page 31). The museum's focus is Palaeontology and it exhibits fossils and archaeological pieces that have been found in the area. The second museum is enclosed in a small community called Frontera Corozal in the southern state of Chiapas (refer to map in the Introduction chapter, page 31). This museum exhibits archaeological pieces from the Mayan culture but also has rooms dedicated to the biodiversity of the Lacandon Jungle and the history of the community.

I have carried out three fieldwork visits over three consecutive years. The first fieldwork experience took place from November 2008 to January 2009 and centred on interviews in Mexico City and initial visits of the two communities. This initial pilot trip allowed me to enter and discover the communities and to assess the options and feasibility of working in these different environments. Access to the communities without local help is a challenging and difficult task, as well as one of the drawbacks of conducting a successful research strategy (Johl & Renganathan, 2010). Approach to the fieldwork subject can take a considerable amount of time, especially when the investigation entails an in-depth study of the research field (Okumus *et al.*, 2007; Patton, 2002; Shenton and Hayter, 2004). In ethnographic research access to subjects in the field requires a great amount of social skills, since it is imperative for the researcher to gain the trust and acceptance of the participants (Wasserman and Clair, 2007). Accordingly, a very important part of my first fieldwork experience was to meet with researchers that were or have been working in the area and could help me to establish contact with people from the communities. The researchers I met have built a close relationship with the community members from researching the environment of their corresponding region for many years, but also because they have later collaborated with the community in the planning and establishment of the museums. All researchers are scientists and/or science communicators currently working at the National University of Mexico (UNAM) located in Mexico City and carrying out regular fieldwork within these communities.

The second fieldwork was carried out from November to December 2010. During this period, I again conducted interviews in Mexico City and I only had the

possibility to visit one of the sites, San Juan Raya, as access to Frontera Corozal was impossible due to heavy rain and blocked road conditions. Thus, I undertook a third and final journey in October 2011 when I visited the community of Frontera Corozal and performed my final field analyses.

2.3. Interviews

Qualitative research interviews were chosen as the main method of research; the objective of these interviews is to obtain descriptions of the world of the interviewees along with their own interpretations of the meaning of the experiences they are describing (Kvale, 1996) and the interpretation by the interviewer, when meaning is searched for. Therefore, an interview is a collaboration in constructing meaning (Gubrium & Holstein, 2002) in which both the interviewer and the interviewee take part in shaping significance. Though interviews do not lead the interviewer to a completely accurate record of an event, they can provide excellent help to learn about what cannot be observed directly (Lindlof, 1995). According to Weiss, among the reasons to conduct a qualitative interview study are the necessity to develop detailed description, integrate multiple perspectives and describing a process (Weiss, 1994). The aim of this research was not to bring a quantitative or statistical account of the benefits that the community museum has brought to the community but to describe a process in which many factors are involved. Therefore qualitative interviews seemed like the best method to achieve my aims. As described below, I carried out two main types of interviews, the semi-structured interview in the case of the participants of the project that are outside of the community and the open-ended interview in the case of the community members.

The Semi-Structured Interview

Since all the outside community collaborators I met have performed different tasks within the museums, standardized and structured interviews (i.e. surveys and questionnaires) seemed inappropriate. The type of interview I decided to use while interviewing the outside collaborators was the in-depth semi-structured interview, where the basic structure is planned by the interviewer, but leaves the possibility of following unexpected leads or to probe further where necessary (Rubin & Rubin, 2005). Also, given their openness, flexible questions are more likely to get a more considered response than closed ones and therefore provide better insight to interviewee's views, interpretation of events, understandings, experiences and opinions (Byrne, 2004). Given that an important part of my aim was to develop a detailed description of the role that these two museums have had within their communities by integrating numerous perspectives of all groups involved, the use of semi structured interviews was much more liable to give me the data I needed. Their use allows the achievement of a level of depth and complexity that is not available by any other, particularly survey-based, approaches.

After the first series of interviews with the external participants in Mexico City, I arranged trips to the communities. As I had not been in these communities with this approach before, the first fieldwork was designed as an "exploratory" experience.

As I have mentioned before, access to the people in the communities is quite difficult without the help of someone local. The researchers kindly agreed to introduce me personally to both communities, as these communities had already been in close contact with academics, researchers and students of the National University, my presence was easily accepted and people were not reluctant to speak to me.

The Open-Ended Interview

Having looked for interviews that would help me to approach the individual and communal experiences brought by the museum and that would also provide an insight of their cultural values, I decided to follow the open-ended interview methodology. This method assumes that no fixed sequence of questions is suitable to all respondents and allows interviewees to raise important issues not contained in the initial question plan (Silverman, 2006).

The open-ended interview methodology, in contrast with the semi-structured, has a lack of structure in the question plan and the issues discussed are imposed by the direction the conversation is setting. However, there is an idea in the interviewer of the issues that need addressing and that will be introduced into the conversation. According to Silverman (2006), open-ended interviews allow participants to give an account of events with their own unique vision of the world, which provides the interviewer a glance into the interviewee's viewpoint.

Having certainly a pre-definite idea of the questions and issues I want to address, I designed a basic plan and structure to follow in my conversations which included open questions that would facilitate deviation towards the issues that came up during the course of my interviews with them. The value of flexible open-ended interviews is their openness; no standard techniques exist in this research method, which makes it particularly useful for accessing and understanding individuals' attitudes and values. This method has, however, some disadvantages, for example the conversation can become too informal and the interviewer might lose control of the conversation, forgetting to address some important issues.

Moreover, since the people of the community had no experience of being interviewed I decided that less formal interviews were going to present a more comfortable scenario for them, allowing me to establish links and having more in-depth answers. Furthermore, as argued by Byrne (2004), qualitative interviewing is particularly attractive to researchers who want to explore voices and experiences, which they believe have been ignored, misrepresented or suppressed in the past. Thus, although leading the conversation, I tried to keep the interviews very informal. After introducing a certain topic to the conversation, I listened and

recorded the answer and then produced follow-up questions based on centre of interests.

Consistency and reliability

During the past forty years, approximately, there has been a debate among scholars in the social sciences on how an investigation should be conducted (Bulmer, 1979; Kirk & Miller, 1986; Marshall & Rossman, 1989; Silverman, 2005 and 2006; Bryman 2008). This debate has much to do with the issues of whether to use quantitative or qualitative research techniques. Since quantitative methodology deals with numbers it is regarded as precise, whereas qualitative deals with words and discourses and has often been disqualified as imprecise and regarded as unreliable given its subjectivity. However some scholars, like Hammersley (1992) do not make this distinction and argue that in this debate we are not facing a dilemma of a *“stark choice between words and numbers, or even between precise and imprecise data; but rather with a range from more to less precise and imprecise data”* (Hammersley, 1992: p.163).

Bryman (2008) contributed to this debate by making a contrasting table of characteristics of both qualitative and quantitative techniques.

Table 2. Bryman’s comparison on qualitative and quantitative research techniques (2008: p.393).

Quantitative	Qualitative
Numbers	Words
Point of view of the researcher	Points of view of participants
Researcher distinct	Researcher close
Theory testing	Theory emergent
Static	Process
Structures	Unstructures
Generalizing	Context Understanding
Hard reliable data	Rich in depth
Macro	Micro
Behaviour	Meaning
Artificial settings	Natural settings

In this description, Bryman (2008) is not holding one method as more reliable as the other one, but he makes a point in showing that both possess characteristics which can make them suitable depending on the research questions and context of the study. Both research techniques can be used to observe and explain the same phenomena, however through different lenses and focusing on different subjects, which finally will give distinct views of the world.

In the case of the particular method of gathering data that I am using in this research, the qualitative interview in which, as I have mentioned previously, meaning is being constructed between interviewee and interviewer. Thus, arises the question to how reliable are the results of an investigation following this method.

Reliability refers to the degree of consistency of a case in with which instances are assigned to the same category by different observed or by the same observer on different occasions (Hammersley, 1992: p.67).

If I had had unlimited time and resources to investigate all community members and researchers involved in case studies I would not have issues of reliability, however time and logistic constraints of this research only allowed me to visit the field in three different occasions and to interview just a sample of people. In order to build a consistent case I tried to stick to a set of questions, within the choice of open-ended and semi-structured interviews. This allowed me to touch the same subjects with different persons, which made it possible to triangulate the information that was being delivered to me.

According to Silverman, the issue of consistency arises because shortage of space means that many qualitative studies provide readers with little more than data extracts (Silverman, 2006). Therefore, complete interview transcripts are very useful in order to present the reader with the complete gathered information, allowing him to formulate his own notions about the validity of the claims of the people who have been studied (Bryman, 2008; Silverman, 2006) as well as the consistency in the study. In this research, in order to provide the reader with all gathered information in the field a complete transcript of the interviews can be

found in Annex 2. The quotes given are accompanied by a reference to the line number to facilitate the finding of extracts in the original transcripts.

Ethnographic observations

As mentioned in the previous section of this chapter, an important part of the theoretical framework of my methodology was formed by ethnographic observations.

Context is of great importance for the understanding of a process, so anthropologists usually argue that if one is really to understand a group of people, one must engage in an extended period of observation (Silverman, 2006). It is in this sense that I complemented my interviews with periods of observation of the community members of both case studies. Additionally, given that my research questions touch on subjects regarding the daily life, cultural habits, experiences and understandings of the community it was imperative to conduct observations as part of my fieldwork experience. I use the term observation rather than ethnography, given that the length of my visits was not enough to claim that I was doing a study in such terms. However, as stated by Silverman (2006), it is not possible to study a given social phenomena without being a part of it all social research is essentially participant observation.

I spent three weeks in the communities the two times I visited each. During those weeks I was interviewing, but I also spent time with people of the community in their houses, I passed several afternoons with the children both in and out of school, with the families that kindly provided me with accommodation and with the women in their kitchen when they were preparing food. Most of all, I spent many days in the museums observing how the work dynamic of the museum staff was. This close contact with community members also helped me to build rapport, a key element in the in-depth interviews. I spent time looking at their social dynamics and organization, what their traditions and customs are, how the

museum inserts itself in the community and the role it has in the every day life, focusing in the conservation of cultural and natural heritage.

2.4. Interview design and sampling

The first stage of my interview process was to decide how to conduct the interviews, the selection of participants and the subjects I wanted to address in the questions. As already mentioned earlier, I wanted to conduct in-depth semi-structured interviews in the case of the researchers and open-ended interviews in the case of the community members. Although my interviews were very open, I had a series of important issues I wanted to address; hence I conducted the interviews with the help of a question guide to ensure the full coverage of all the topics. The interview schedule can be found in Annex 1.

My sampling was open as I did not set a list of interviewees in advance and my decision to interview people has been made as the fieldwork phase of the project advanced. However, the sample choice was not randomly chosen, since the number of interviewees that form the sample have to fulfil the necessary requirements to bring the sought information, the sample has to be chosen according to relevant criteria for the investigation. I followed what Glaser and Strauss call a strategic selection (Glaser and Strauss, 1967).

When choosing to do open ended and semi structured interviews I realized it was not possible for me to interview a large number of people, especially given the time and travel constraints of this project. I therefore decided to use concentrate on people that I knew could provide me with relevant information and could tell me the most valuable social and personal stories. All the participants I chose in my sample were knowledgeable of the processes of the creation of the museum. I was, however, aware that this strategic selection could introduce some bias and affect the validity and reliability of my findings. I tried to counteract this potential bias in several ways, firstly by framing my questions neutrally, secondly by including in my sample one person that had worked with the community but had never been

involved directly with the museum, finally, as I stated in page 53, I tried to address the same subjects with different persons, which made it possible for me to triangulate the information gathered in the interview process.

The list of interviewees (Table 3, page 58) includes both members of the communities and people from outside that had an active participation in the process of creation of the museum or that had contact with the community but not necessarily due to museum related activities.

I carried out nine interviews per case study. Most of the community members I interviewed had never had that experience before so I decided to interview them at home or at some place of their convenience so as to make them feel comfortable. In the case of the researchers, the interviews took place mostly at their laboratories and/or offices in Mexico City.

2.5. Ethical statement

Lindlof (1995) argues that the rapport between interviewer and interviewee begins with clarity of purpose. Interviewees should be given clear and honest reasons of why they have been chosen to participate. In agreement with this statement all persons involved in providing information for this research received a clear statement on the subjects on this research, the methodology I was going to follow and what their part in it was going to be.

When establishing contact with research groups of the National University an email with a summary of the project to give a clear picture of the research aims and the exact methods that would be used was provided.

To consider the principle of informed consent, permission was always requested and information about the project given when conducting interviews. Consent was verbal and all interviewees participated in this study voluntarily. At the beginning of each interview I introduced myself and asked permission, firstly to carry out the interview and secondly, to record it.

All interviewees were fairly treated; no questions were destabilizing, disturbing or sought to disclose personal details or political views of the participants. No one was forced to answer questions they did not want to and participants could stop the interview at any point.

Participants were informed that all interviews were going to be transcribed and translated by me and that only fragments were going to be used for this research, but that the full transcripts were going to be published in the research. All interviewees gave full consent to be identified and quoted in this manuscript.

Full set of questions can be found in the interview schedule (Annex 1) and transcripts of all interviews can be found in Annex 2.

2.6. Summary of interviews and interviewees

A total of eighteen interviews were performed, transcribed, translated and coded. All of them were with people related to the museums, nine per museum. As discussed in a previous section, where I describe each of the case studies both museums lie within small communities in rural areas. The sample of interviewees for this research is small due to two factors. First, the time constraints and the difficulty in accessing the communities forced me to reduce the scope of this study. Secondly, the planning and construction of both museums involved only a handful of people, which meant that, not many people could be considered knowledgeable to be interviewed in the subject.

In the table that follows I provide a full list of interviewees by name, and group them according to the nature of their involvement within the museum, i. e. community members or outside participants for both museums. To each of the interviewees I have given an abbreviation, which will be used for identifying excerpts in the analytical chapters of this investigation.

Table 3. List of interviewees met through the fieldwork experiences.

	Community member	External collaborator
San Juan Raya	<ul style="list-style-type: none"> - Alvaro Reyes (AR) - Juventino Reyes (JR) - Primitivo Reyes (PR) - Minerva Hernández (MH) - Juan Reyes Barragán (JRB)²⁶ 	<ul style="list-style-type: none"> - Alfonso Valiente (AV) - Carlos Silva (CS) - Luguí Sortibrán (LS) - Sugéy Martínez (SM)
Frontera Corozal	<ul style="list-style-type: none"> - Sebastian Arcos (SA) - Florencio Cruz (FC) - Lucía Arcos Mayo (LA) - José Antonio Pérez (JP) - José Mendez (JM) 	<ul style="list-style-type: none"> - Elena Alvarez Buylla (EA) - Esteban Martínez (EM) - Alma Delia De los Rios (ADD) - Fernanda Figueroa (FF)

Amongst the nine interviews regarding the Community Museum of Palaeontology in San Juan Raya, five of them were made with people of the community while the other four were with people from outside who have been working with them for a long time. Three of them are researchers from the National University that have been conducting biological research in the area and have been also involved in the creation and development of the museum and the fourth one is the schoolteacher of the primary and only school in the community. In the following table I give a complete account of each of the participant's function within the community and their participation in the museum creation and consolidation.

²⁶ The community of San Juan Raya was founded by a small number of families and nowadays, as I have mentioned before, has a population of around 140 persons, which means that most of the community members are related to each other to a varying degree and many people share the same last name. The community members in this sample share the last name "Reyes", however, they are not from one single household, but are only distantly related to each other.

Table 4. Full list of interviewees and their function and participation in the community museum of palaeontology in San Juan Raya.

Interviewee	Function and participation
Alvaro Reyes (AR)	Farmer. One of the founders of the museum. The person in charge of all communal goods in the community at the time of my second visit.
Juventino Reyes (JR)	Farmer. One of the founders of the museum.
Primitivo Reyes (PR)	Farmer. One of the founders of the museum.
Minerva Hernández (MH)	Museum explainer and receptionist.
Juan Reyes Barragán (JRB)	Farmer. Founder of the guided tours initiative.
Dr. Alfonso Valiente (AV)	Head of the research group “Community Ecology” at the National University of Mexico. Researcher with more than 20 years of investigations in the area. Collaborated in the creation and management of the museum.
Carlos Silva (CS)	Researcher in the “Community Ecology” laboratory of Dr. Alfonso Valiente. Collaborated in the creation of the museum.
Lugui Sortibrán (LS)	Researcher in the “Community Ecology” laboratory of Dr. Alfonso Valiente. Collaborated in the creation of the museum.
Sugey Martínez (SM)	Primary School Teacher at the School of San Juan Raya.

In the case of Frontera Corozal, I also carried out nine interviews, five of them with people of the community who have been involved in the museum’s creation and management for many years. The other four involved people from outside the community, three being involved in the project of refurbishing the biodiversity gallery and the fourth one having worked with the community but having never been involved directly with the museum. As with the other case study, in the following table I give a complete account of each of the participant’s function within the community and their participation in the museum creation and consolidation.

Table 5. Full list of interviewees and their function and participation in the community museum of Frontera Corozal.

Interviewee	Function and participation
Sebastián Arcos (SA)	Farmer. President of the museum in 2009. One of the founders of the museum.
Florencio Cruz (FC)	Biologist and farmer. Has collaborated in the creation and management of the museum.
Lucía Arcos Mayo (LA)	Waitress at the museum.
José Antonio Pérez (JP)	Person in charge of maintenance of the galleries.
José Mendez (JM)	Farmer. President of the museum in 2010 and 2011.
Dr. Elena Alvarez Buylla (EA)	Head of the research group “Molecular Genetics, Development and Plant Evolution” at the National University of Mexico. Researcher with more than 20 years of investigations in the area. Collaborated in the renovation and management of the museum.
Esteban Martinez (EM)	Biologist. Collaborator of Dr. Elena Alvarez Buylla. Discoverer of the plant <i>Lacandonia schismatica</i> . Researcher with more than 30 years of investigations in the area.
Alma Delia De los Rios (AD)	Landscape architect. Collaborator of Dr. Elena Alvarez Buylla. Participated in the renovation and management of the museum.
Dr. Fernanda Figueroa (FF)	Biologist. Lecturer of Environmental Sciences at the National University of Mexico. Has never collaborated with the museum, however she has developed research in the Lacandon Region.

2.7. Analysis

In the following sections I present the method of analysis that I followed for the examination of the data gathered through the interviews. I give also an account of the coding themes that emerged from my data.

Preparation of the analysis

I recorded all interviews using an Olympus Digital Voice Recorder WS-300M and then transcribed them manually using Word Office 2010. I transcribed the whole of the interviews and checked for consistency by listening to the audio files while reading the transcription. Once all errors were corrected I translated the full transcripts from Spanish into English. I decided to transcribe the full interviews, since my aim was to approach the coding process in a manner described by grounded theory (Strauss & Corbin, 1998), which particularly refers to a focus on intense familiarity of the data by the author, who cautiously examines it and immerses in it. Furthermore, transcribing the whole conversation forced me to pay attention to what was being said, the important issues that were being touched and also the issues I did not address.

Transcription is not a value-free process of merely transforming audio data into a written format, but all transcripts are *“selective and interpretative”* (Edwards, 1995: p.19) and therefore *“a transcript is one interpretation of the interview”* (Arksey and Knight, 1999: p.141). I did not pay exhaustive attention to speech modifiers, pauses, and accentuations on the voice and body movements, due to time constraints in the analysis. I also realized that I did not gain much in retaining these modifiers in the final transcripts. I did, however, transcribe very closely and noted verbal tics like “mmh”, repeated words, overlapping speech and interruptions to the interview.

Coding categories

Some of the coding categories in my results were determined according to my own investigative interests and my previous literature reviews, while other important subjects and issues were drawn from the later transcripts. I followed the Rubin and Rubin (2005) process of selection of coding categories, whereby they state that the categories come not only from the reading and interpretation of the interview transcript itself, but also from previous literature, background reading or other experiences. However, they highlight the importance of preventing an established theoretical position from overshadowing original ideas found in the data. So, while all codes do emerge from my data, the coding process was not approached with the “neutral researcher” idea of Strauss and Corbin (1998). The research questions were considered throughout the process and the data was examined, in great part, to elucidate these (Coffey and Atkinson, 1996; Flick, 2002). For example, in my interviews the theme of the involvement and appropriation of the museum by the community was one I previously knew to be relevant for my study, however subjects related to the communication process between community members and outside participants, were not contemplated before carrying out the interviews. but arose from my reading of the transcripts.

Thus, I started the coding process after the transcription, translation and careful reading of the interviews, as well as the recognition of a number of concepts, events and subjects, I carried out an open coding process according to the methodology proposed by Strauss and Corbin (1990), which provided me with the relevant subjects on the interviews. I carried out a systematic examination and analysis of the interviews and I performed a manual coding of the interviews instead of using coding software. I opted for a manual method, as I was unconvinced that a software was going to pick up the issues I was looking for. Firstly, themes and events mentioned in the interviews are best discovered through immersion in the data and careful reading and analysis of the interview material. Also, this careful reading forced me to pay close attention to the discourse that was being formulated during the interviews. Secondly, as my sample of interviews was open and included diverse levels and manners of involvement

with the museums, the discussed topics and narrated experiences were numerous, as reflected in the variety of the coding themes, and analyses with coding software would not have been a suitable method to follow.

Coding was done in hard copies of the material by manually underlining, marking and writing notes. Transcripts were read several times and annotated. In every read new ideas were found and old ones refined. My coding process was an iterative process.

Coding themes

After the categorization of data that the open coding provided me I identified core categories around which the data could be grouped. As I have previously emphasized, these core categories are not only based on the open coding of the transcripts, but they also relate to the subjects that my research questions aim to answer. The core categories produced global themes that were recurrently addressed in the interviews and in which I based the analysis of the interviews. Data was analysed in relation to these global themes in order to extract more analytical and less descriptive codes.

In the case of the Community museum of Palaeontology of San Juan Raya, the analytical themes are as follows:

1. The valley of Tehuacán-Cuicatlán
 - History of the area and current social problems
 - Government interactions with communities and public policies
2. Conservation
 - Biodiversity of the valley of Tehuacán-Cuicatlán
 - Economic activities and their impact in the destruction of the environment
 - The museum as an economic force
 - Conservation in a protected area and development
3. The palaeontology community museum of San Juan Raya
 - Introduction to the museum

Creation of the museum, reclaiming control of their patrimony
Participation from outside experts and the process of appropriation
Dialogue of knowledge, attitudes to each other
Managing the museum, organization within social institutions of the community

4. Further indicators of social change

Restoring value to heritage and cultural identity
Change of gender related attitudes
The museum as catalyst for other projects

Regarding the Community Museum of Frontera Corozal, I identified several important themes during the coding process and arranged the analysis of categories as follows:

1. The Lacandon Region

History of occupation and use of the territory: Government interactions with communities and public policies
Current social problems of the area

2. Conservation

Biodiversity of the Lacandon Jungle
Conservation in a protected area and development
Economic activities and their impact in the destruction of the jungle
The museum as an economic force

3. The community museum of Frontera Corozal

Introduction to the museum
The creation of the museum, reclaiming control of their patrimony
Intervention from outside experts and the process of appropriation
Dialogue of knowledges, attitudes to each other
Managing the museum, organization within social institutions of the community

4. Further indicators of social change

Restoring value to heritage and cultural identity

In chapters six and seven I will present the data that the coding of the interviews produced regarding these coding themes. In chapter six I will discuss the outputs and findings about the four topics in the case of the Palaeontology museum of San Juan Raya, then in chapter seven I will refer to the four topics regarding the Community museum of Frontera Corozal before undertaking a final analysis, in chapter eight in which I will perform a conclusive account of my findings in both museums in relation to Corsane's (2006a and 2006b) indicators to give an account of both museums in regards to ecomuseum practice and philosophy.

CHAPTER III

Museums

The following literature review is divided into three main sections, which I will examine separately in each of the next three chapters. Firstly, in this chapter, I will start by presenting an historical account of museums with a special emphasis in the development of museums in their colonial context. I will then introduce the novel ideas of the New Museology movement and discuss the impact they have had in the development of museology and museographical practices. Subsequently, I will discuss the subject of the transition towards the strengthening of the participatory model in science and natural history museums.

3.1. Brief account on the history of museums

As stated before, my research focuses on two community museums in Mexico. I want to evaluate these institutions to find out if they fulfil the roles they claim to²⁷. In this section I will address the subject of the origin of museums and the establishment of the traditional museology tenets, whereas the following section will present the philosophy and practice of the New Museology.

Community or ecomuseums²⁸ arose as part of a movement named *Nouvelle Museologie* that emerged in the 1970s in France (Davis, 1999; Burke, 2006). This movement was born from the discontent among museologists with hitherto traditional museology establishment.

Traditional museum practices denied access to diverse voices, sensibilities and cultures of the modern world (Hernández-Hernández, 2011) and New Museology opposed to the elitist and exclusive mentality that traditional museums were perpetuating since their creation.

In his essay “Museums, Artefacts and Meanings” Saumarez-Smith (1989) recognizes four principal characteristics of the early museums: collections should contribute to the improvement of knowledge, be arranged according to some systematic scheme of classification, museums should be owned and administered by more than one person on behalf of the public and finally they should be reasonably accessible to the public (Saumarez-Smith, 1989: p.7). Museums were created as “encyclopedia” institutions, in which art, science, technology, natural history or archaeology, had to be contained in an exhaustive manner, like a thematic three-dimensional dictionary (Alonso-Fernández, 1999).

The museum is a late 17th century innovation of the Western world, born out of the cabinets and collections of merchants and explorers that grew in popularity

²⁷ The stated aims of the two community museums that constitute the case studies are in chapter 1, page 32.

²⁸ A clarifying note on the use of these terms can be found in footnote 7.

throughout Europe in the 16th and 17th centuries. Across the continent, people set out to collect, classify and study the world's treasures of art and the wonders of nature.

"A theatre of the broadest scope, containing authentic materials and precise reproductions of the whole of the universe."

Such was the idea that Belgian scholar Samuel Quiccheberg (1565, quoted in Mauries, 2002: p.23) had of the ideal collection. It is Samuel Quiccheberg's *Inscriptiones Vel Tituli Theatri Amplissimi*, published in 1565 that is considered often as the first museological text of modern times.

According to French philosopher Michel Foucault (1986) the idea of establishing a sort of global archive that will contain all times, periods, tastes and forms in one place, an archive that is in itself paradoxically timeless, is essentially an idea that belongs to our modernity. Cabinets of curiosities- private collections conformed by natural and cultural artefacts- were seen as an essential element of the homes of the learned and fashionable in the 16th and 17th century (Impey & MacGregor, 2001). These cabinets of collections were characterized by incongruity and disorder,

"... a necklace made of shark's teeth could be next to an Egyptian mummy, in turn next to a Chinese lady's boot" (Greenwood, 1888: p.4 quoted in Bennet, 1995).

According to Arnold (2006), around the 1540s private collecting became established in Northern Italy, and by the beginning of the 17th century Italy had already four public galleries, among them the Uffizi Gallery in Florence. This trend spread to the rest of Western Europe and in the Renaissance epoch *"the fashion for gathering and housing collections of all sorts resulted in the foundation of thousands of museums across Europe"* (Arnold, 2006: p.14)

From this time forward, natural history and collection building became a passion for many individuals, eventually manifesting itself as a major social phenomenon in the centuries to come (Allen, 1976; Impey & MacGregor, 2001).

It was only during the late 18th and 19th centuries, that the public museum acquired its modern form and entered the institutional and public domain (Davis, 1999). These modern museums wanted to distance themselves from the chaos of the cabinet of curiosities and changed the practices of earlier collecting institutions. The process of their formation involved a transformation of earlier practices and the adaptation of new trends, such as the international exhibition and the department store, which were new institutions that developed alongside museums (Bennet, 1995). Furthermore, when private collections were then transported into public buildings or libraries they were transformed from “*emblems of connoisseurship*” to sources of factual knowledge (Arnold, 2006: p.20).

The distinguishing features of the museum were the principles of ‘specialization and classification’, this meant the creation of a series of specialist museums with their own fields of expertise (geology, art, natural history, among others) where objects were arranged in a manner calculated to show an orderly and scientific view of the world (Bennet, 1995). Museums started to build a semantic record, with collections being organized systematically. Arnold (2006) highlights the importance of Baconian philosophy in this shift of role in the modern museums era. Under Baconian ideas, he writes, museums became workshops where objects were inspected for the production of factual evidence. It is in this way that museums changed from places of contemplation of rare original objects from the past, sometimes coming from distant and exotic places into an important research tool in many disciplines. It was Foucault’s *Order of Things* that “*made it impossible to contemplate the history of words without things, an viceversa*” (Arnold, 2006: p.30). Objects in museums then became tools that provided a new style of inquiry and learning. Thus, museums became not only represented spaces for the contemplation of the collections open to the public, places to both inform and entertain visitors, but also places for the research of new ideas through the use of objects.

However, Ducan (1995) argues that museums have been regarded, since the Enlightenment, as archives of civilization where an exclusively Eurocentric culture has been the dominating discourse, which has scarcely left any room for other

ways of thought. This has certainly been the case with the establishment of museums in colonies during the European colonial period, from the 16th to the mid-20th century. In the next section I will look into colonialism and its impact in museum practice.

3.2. Museums and colonialism

Having reviewed the origin of museums and the noted changes that museology has experienced in the western world, I turn to consider how these ideas influenced the way in which museums were planned and established in the newly discovered lands. My aim is to see how the old museology tradition was established in the colonies and how the birth of new museological ideas brought about change in the way museums are created in these countries. As I shall show, the colonial status of those dominions is an important factor in the development of museums.

Colonialism has played a significant role both in configuring the collections in museums and the audience community that might potentially use them (Simpson, 1996). Professor Moira Simpson, from the University of South Australia, has conducted extensive research into current practices in the display and interpretation of non-western cultures and the role of the complex power asymmetries of colonialism in museums. Her work focuses mainly on aboriginal populations in Australia and does not discuss the issue in Latin America, however I have found many similarities in the way indigenous groups have been regarded and represented in museums both regions. Simpson describes how in Europe, the tradition of museums has been, historically, linked to reflecting and serving a dominant cultural elite. Museums reflect the views and attitudes of hegemonic cultures and are the material evidence of colonialism practices of European cultures in which museums are rooted (Simpson, 1996). Indigenous people frequently refer to museum displays as a limiting way to represent, express and conserve their culture (Simpson, 2009).

Christine Mullen-Kreamer, chief curator at the National Museum of African Art of the Smithsonian Institution, confirms this view and states that:

“from the seventeenth century through the twentieth, collections have helped to establish positions of authority, dominion, and social imperialism over the ‘collected other’ in the service of individual or state sovereignty” (Mullen-Kreamer, 1992: p.368).

It is in this sense that museums have contributed to and reflected the creation of a cultural hegemony. It is logical then that the western museum model was also applied to emerging museums in the colonies; the collected objects were taken from their cultural context and placed in a new one inside the galleries. This has brought many social problems throughout time. Simpson (1996 & 2009) argues that the plurality of contemporary, post colonial societies gives rise to complex issues in relation to museums, such as display and interpretation values attached to objects, cultural bias in representing other cultures, the lack of representation of cultural diversity and demands for self representation. Indigenous people were given their subaltern social position, were used as subjects, resources and informants, but were largely excluded from the processes of representation and the management of heritage, that is, absent from the object and classification narrative. According to Mullen-Kreamer museums have contributed to the reinforcement of colonial views of domination, mainly:

“through representation of the ‘other’ as being in a state of ‘arrested development’, both intellectually and culturally” (Mullen-Kreamer, 1992: p.368).

The colonial origin still has an imprint upon museums and upon public perceptions of them. However, despite the history of the complex power struggles under colonialism, museums have been undergoing a transformation in the way that they function and in their relationship with the cultures they purport to represent through their collections. Although museums have been slowly, transforming into institutions concerned with public participation and community engagement, it is only in the past decades that their social role has been more deeply explored:

“it is only recently that museums have started to reflect on the political and social implications of their exhibitions regarding the cultures they are representing“ (Mullen-Kreamer, 1992: p.368).

Miller and Yúdice (2004) discuss that culture cannot be contained within simplistic schemes since there are diverse ways of experiencing, applying and representing it. For this reason, Hernández- Hernández (2011: p.70) argues that

“There is no longer any use for the hegemonic models encountered in institutional discourses, since the reality of society is polyphonic and ever-changing, and museums remain the reflection of that society”.

This transformation in museums has seen them making a transition from the discourse of colonialism to engaging in the politics of indigenous recognition (Butts, 2007). Simpson (2009: p.122) states that

“As a result, contemporary museology has undergone a significant shift, from practices and purposes based on ideas of heritage as evidence of the past – valued for its historical research potential and as the basis for a thriving industry – to recognition of the contemporary value of heritage for living cultures.”

This change also reflects shifts in the relationship between dominant western cultures and those of subaltern indigenous minorities and silenced cultures (Simpson, 1996). The rise of these new ideas and the establishment of the New Museology is the subject of the following section.

3.3. New museology

“... a new museology, one which is always conscious of, and always exploring, the nature of the relationship between social systems and the physical, three-dimensional environment, and always aware of the ethnography of representation.”

Saumarez Smith (1989: p.21)

The term *Nouvelle Museologie* was used in the late 1970s in France by a generation of museologists and became well known with the publication of the article “Nouvelle Museologie” by André Desvallées in 1980 (Burke, 2006). A young generation of French museologists and curators including Georges Henri Rivière, Hugues De Varine and Pierre Mayrand, adopted the term to define a movement that, allegedly, challenged and questioned old approaches to museology. Current museum practices were considered obsolete and the whole attitude of the professional museologist was criticised. The profession was urged to renew itself in the perspective of new social commitments. As a result of this ‘revolution’ in museology, the *New Museology* movement arose.

Throughout the last thirty years of the twentieth century, many museologists of the western world began to question some of the long established practices of museums because they thought that they were failing to make a relevant cultural change in society (Hauenschild, 1988). For Maynard (1985: p.200) the rise of the new museology

“must lie in the museum establishment’s delay in coming to terms with a number of contemporary, cultural, social and political development. (...) and re-evaluation of all human endeavour”.

Vergo (1989: p.3) complements this vision and describes “a state of widespread dissatisfaction with the old museology, both within and outside museum profession” and states also that the old museology was: “too much about museum methods and too little about the purposes of museums” (Vergo, 1989: p.3).

According to Lavine, this change in museums was also a consequence of the political situation after the civil rights and anti war movements of the 60s and 70s. He states that after those protests every cultural, educational and governmental institutions, as was the case of museums, changed the way of organizing their internal structures; the power of representation was subjected to questions on their way of retaining and dispersing this authority (Lavine, 1992)

The Yugoslav museologist Tomislav Sola (1986, quoted in Schouten, 1987: p.242) developed a table of characteristics in which he compared the traditional and new museums. First, he stated that traditional museums were purely rational and specialized whereas the new museum takes emotions into account and allows complexity and multidisciplinary. Later, he mentions that traditional museums are oriented towards end products while new museums are more oriented towards processes. Finally, he states that traditional museums emphasize on objects while new museums give visible form to concepts and that traditional museums are oriented mainly towards the past, whereas new museums are relevant to the present. Sola considers new museums to be informal and communicative, nonconformist institutions oriented towards change.

This comparison by Sola (1986, quoted in Schouten, 1987: p.242), suggests that new museums are the product of a radical transformation in the way they present their collections and in their interaction with their public. However, as I will show further ahead, many authors consider new museological practices only as a supplement that opened the traditional museum to new dimensions, for example public participation. In spite of the title of "New Museology", this new movement did not reject completely the traditional museology narrative or the place given to the "visitor", it continued to be based on the use of objects and curatorship and it did not abandon the educational idealism of the traditional museum (Davis, 1999). The new ideas and concepts that this new movement introduced aimed to open up new techniques and methods to enable the museum to improve the interaction with their public (Hauenschild, 1988). In the context of this new movement, museums reduced the 'distance' with its public; they changed from being presenters of objects, values, traditions and knowledge into active participants

within their communities, an influence to the changes and transformations in lifestyles and behavior. Through this new role museums were forging a new relation between past and present (Davallon *et al.*, 1992). It was necessary for museums to establish new perspectives and their role, in which these institutions were no longer just hosts of phenomena and objects, but places where controversial debates took place, allowing the public to engage and raise questions. Although, as I argue further on, there was never a 'neutral' presenter of the objects in question.

The Declaration of Quebec (1984), produced at the First International Workshop on Ecomuseums and the New Museology summarizes the movement's principles. According to this document, the new museology fulfils the traditional roles of museum, identification, conservation and education, expanding these principles and integrating them more successfully into the social institutional complex. To achieve this, the Declaration goes on, museums should use modern methods of engagement and turn to interdisciplinarity and transparent management methods. As Rivard states, (1984, quoted in Davis, 2008: p.400), "*new museology means a move to a museum which is open to inter-disciplinarity, to the public, to society and to criticism*".

Davis defines the New Museology movement as: "*the radical reassessment of the roles of museums within society*" (Davis, 2011: p.61). With this definition he highlights that a true new trait in this *Nouvelle museologie* movement was the recognition by museologists, curators, cultural mediators and members of the public that museums are or could be active participants in a local or regional level, in the process of participation and empowerment in their communities with the use of the exhibition as a medium for the conservation of heritages as common goods (Ducet, 1999).

Hauenschild (1988) affirms that the new museum has to be an educational institution directed towards making populations aware of their identity. These ideas are highly relevant to my work, given that this new posture of the museum as

an institution that is more embracing of social roles is what opened the path to new initiatives like the eco or community museums worldwide.

In this attempt to be an institution more inclined to include, engage with and represent their communities:

“new museology encompasses museological approaches to gender, colonialism, sexuality, ethnicity or class, the willingness for museums to be controversial, to be agents of change, to promote varied or alternative points of view, to use new and different interpretive approaches and to reach new audiences” (Davis, 2008: p.400).

According to Ducet,

“New museology fosters an active sharing of techniques and experiences between regions and culture, promotes the preservation and transmission of cultural and natural heritage as a common good, while encouraging museum’s social initiatives, (...) and therefore become participants as community actors in the process of safeguarding and mediating their heritage” (Ducet, 1999: p.9).

A key feature in the new museum blueprint is the inclusion of the inhabitants of the museum community as a very important part of the museum itself. The collections are not made only for the visitors that come to the community to see the museum, but for the community members itself, and in some cases with their participation. Norwegian museologist Marc Maure has proposed three formulations that signalled the directions that new museums had to follow in order to depart from old museology tenets: 1. Museums have to move from being institutions focused on one discipline to a multidisciplinary approach. Emphasis has to be made in the relationships between people and the natural and cultural environment. 2. Museums have to focus on the community rather than on the public. In this way, museums become actors in the cultural, social and economic development of the community in which they are inserted. 3. New museums need to move outwards of the building and occupy a territory, defined by geography, politics, economy, ethnicity, etc. (Maure, 1996)

Alonso-Fernandez (1998:95) created a simple diagram to illustrate the differences between traditional and new museums, based on the ideas of Maure.

Table 6. Differences between traditional and new museums. Alonso-Fernandez (1998: p.95)

The traditional museum	The new museum
A building	A territory (Decentralized structure)
A collection	A heritage (Material and non-material; Natural and cultural)
A public	A community (Development)

Since the relationship with their community is central to the claims of the New Museology movement and each museum is unique in its setting and the community it seeks to engage with, the heterogeneity of the characteristics of these museums is very varied. In this sense a comparison like the one Alonso-Fernandez (1998) is proposing is more appropriate, given that due to its simplicity it can be applied to various projects.

3.4. Towards a more participatory model in museums worldwide

We have seen earlier in this chapter that in 18th Century Europe, the first museums were created to function as encyclopaedic institutions in which subjects like art, science, engineering, natural history, anthropology and archaeology among others, had to be covered exhaustively (Alonso-Fernández, 1999). Museums were places of observation and entertainment, as well as places of study and research.

During the history of museology, there have been serious concerns that museum practices of exhibition separate the object from the observer, disconnecting the object with the reality, impeding an engagement process with the audience. In the opening lines of Douglas Crimp’s essay “On the Museum’s Ruins”, published in

1993 in a collection of essays with the same title, he quotes Theodor W. Adorno who argues: *“The German word museal (museumlike) has unpleasant overtones. It describes objects to which the observer no longer has a vital relationship and which are in the process of dying. They owe their preservation more to historical respect than to the needs of the present”* (Adorno, 1967, quoted in Crimp, 1993: p.44)

Museums have suffered, due to this deficiency of engagement with the public and the communities in which they are located, a lack of legitimization within public life. As a result, in their search to reach an important role in modern society, museums are looking to establish themselves as public spaces for interaction with the public (Knell *et al.*, 2008; Karp *et al.*, 1991; Watson, 2007). Museums’ strategies to establish a communication process with an audience that is evolving and changing can include series of events, workshops, lectures, and other participatory activities. Museums have the need to captivate the public by presenting attractive subjects in a more interactive fashion, therefore the value of public participation in the creation of the gallery content is being acknowledged by museum professionals.

The revalorization of public participation has changed the communication process between museums and their audiences and has been adapting to the evolution of new media as well. Participatory projects are allowing interest groups to be heard in what is being exhibited in the galleries and how the objects, traditions and knowledge are being exhibited. This, however, poses a challenge to the work of curators and museum staff. As expressed by Lavine,

“In the past, museums have worked from the assumption that taste and expertise justified the right of trustees, curators and museum scholars to present what they believed their audiences should know. Often this expertise was acquired through scholarship and education. Yet the definition of what should be included in museums is now under attack” (1992: p.138).

This debate is highlighted by Moore, who affirms that museums have traditionally directed their collections to “*high culture, a celebration of the extraordinary and the outstanding, whereas popular culture is low culture, the ordinary, the everyday*” (Moore, 1997: p.1) and therefore the inclusion and representation of popular culture has posed a difficulty to the curators work.

Although interactivity in the gallery is the favourite method for participation it is only one way among many in which the public can get involved with museums and their collections. There is a wide range of levels of participation that the public can have within the museum, from the questionnaire filling at the end of an exhibition, to donating some personal effects for display to participation with museum staff to developing a new exhibition from the beginning.

Museologist Nina Simon, author of “The Participatory Museum” (2010) argues that the development of new media and the introduction of Web 2.0 websites²⁹ has awoken the necessity among the general public to share experiences and has habituated them to participatory entertainment and learning experiences. She states that nowadays visitors to cultural institutions such as museums:

“(...) expect access to a broad spectrum of information sources and cultural perspectives. They expect the ability to respond and be taken seriously. They expect the ability to discuss, share, and remix what they consume.” (Simon, 2010: i)

To classify participatory projects Simon (2010) uses the models of participation described by Rick Bonney and his team of educators and science researchers at the Center for Advancement of Informal Science Education (CAISE) formed in 2007 within the project entitled Public Participation in Scientific Research (PPSR). The project’s report (Booney *et al.*, 2009) defines three models in which the public participates with scientific research: *contribution, collaboration and co-creation*. Nina Simon claims that as cultural institutions are run similarly as science labs, in the sense that they are run under the guidance of authoritative experts, the three

²⁹ A Web 2.0 site uses technology that allows users to interact with each other, in contrast to website that only allow passive viewing. Some examples of Web 2.0 sites are social networking sites, video sharing sites, blogs, wikis, etc.

models for public participation of the PSSR report can be applied to museums, only with some slight alterations in the terms used. In her definition, in *contributory* projects “visitors are solicited to provide limited and specified objects, actions, or ideas to an institutionally controlled process.” (Simon, 2010: p.187) classic examples of this model are the questionnaires and comment boards during the creation and at the end of an exhibition. In *collaborative* projects “visitors are invited to serve as active partners in the creation of institutional projects that are originated and ultimately controlled by the institution” (Simon, 2010: p.187). Finally, she states that in co-creative projects “community members work together with institutional staff members from the beginning to define the project’s goals and to generate the program or exhibit based on community interests” (Simon, 2010: p.187).

As I have stated in the introductory chapter (chapter 1 page 23) I will refer to participation as the process in which the community makes and shares decisions that will affect the life of those involved. However, in the analysis of the way the participation has been undertaken between community members and outside collaborators I will abide by the classification of participatory projects given by Simon (2010) that I have explained in precedent paragraphs.

3.5. Participation in science museums

Traditionally, science museums have emphasized heritage through objects of historical value (Arnold, 1996; Caulton 1998). By the 19th century science museums had flourished in Europe. They were “*institutions of authoritative, incontestable knowledge*” (Pedretti, 2002: p.3) that exhibited a visible and ordered world. During the twentieth century science museums were presenting themselves “*as experts in the mediation between the esoteric world of science and that of the public*” (MacDonald, 1998: p.13) Traditional science museums’ collections were based on objects with no broader context and with no relation to the general public (Janousek, 2000). This ultimately gave them an image of outdated institutions that served as repositories of artefacts and that were out of touch with reality (Pedretti, 2002). Science museums are evolving to include “*social*

responsibility, the raising of social consciousness, and science, technology and environment issues” (Pedretti, 2002: p.5).

As a response to the need of social interaction within the museum, science and natural history museums, in particular, are focusing efforts in improving access to their collections (Caulton, 1998) and developing new ways to represent and communicate science, using visual arts and electronic media. He states that visitors expect to have an active interaction with the exhibits, to learn and to be entertained all at once (Caulton, 1998).

Thus, one very strong tendency is to create exhibitions in which the public can interact with the objects within the gallery space. It has been recognised, by some studies, that social interaction and the use of interactive media is critical to the way a visitor experiences museums and galleries (Falk & Dierking, 1992; Hein, 1998), since some research has proven that in educational terms interactivity and social interaction are fundamental in the acquisition of new knowledge and new abilities both in adults and in children (Lave, 1988; Rogoff *et al.*, 2003). Interactive modules are nowadays broadly used resources in the creation of communication between the visitors and the collections (Marty & Jones 2007; Thomas & Mintz 1998) since they have been recognised as a fundamental element in the interpretation of the collection, which brings a richer sensory experience to the visitors (Heath & vom Lehn, 2009). This is why science museums, natural history museums and science centres around the world like the Natural History Museum and Science Museum in London, the At-Bristol, the Glasgow Science Centre, la Cité des Sciences et de l’Industrie in Paris, The Exploratorium in San Francisco, the CosmoCaixa Science Museum in Barcelona, the Science Gallery in Dublin and Ciência Viva in Lisbon, are leading institutions in creating new interactive media to improve the display of their collections as well as developing new methods to engage with the audiences in order to achieve a higher degree of participation.

As part of the engagement strategy with the audiences there is a need for museums to, as stated by Australian museologist Lynda Kelly (2006), take part in facing old social problems like human rights and inequality, but also to stay relevant in the

face of new social problems such as climate change, population growth and sustainable development:

“Museums, their missions, their civic, social responsibilities, and their modes of engagement with communities are in a constant process of transformation in response to social and economic imperatives at local, national and global levels”
(Kelly, 2006: p.1)

Given the urgency we currently face to solve environmental issues on the planet, this last point is especially critical since science museums must now take on more active roles to persuade the public of the importance of environmental protection, and the implementation of sustainable alternatives for development. Public and communal spaces can play a major role in enabling the public to form and communicate opinions and actions on urgent environmental issues.

Ecomuseums are part of this new thinking in museum practice and have at the core of their objectives to encourage participation as well as to conserve and interpret both tangible and intangible heritage of a desired area *in situ*. These characteristics can potentially make them tools for the preservation of the natural environment of a certain geographical area. The investigation of the validity of this claim is one of the objectives of this research.

3.6. The role of community museums in the empowerment of indigenous groups

During the 1970s, the world saw a growing trend where indigenous and minority groups throughout the world formed political organizations to fight for the recognition of their identity, the resolution of land issues and equality of opportunities in social and political spheres (Simpson, 1996). As a result of this movement the conservation and the celebration of the indigenous heritage has become a central topic for cultural policy since then (Komatsu, 2003).

For Maure (1996), the “traditional museum”, the scheme created in the western world in the XIX century, is marked profoundly by the objective of constructing a national culture based on cultural homogeneity. This homogeneity is based in a reflection of the dominant culture, which acts in detriment, of other marginal, less numerous or less powerful cultures that have lived or are still living in the territory. Therefore, the new movement that seeks to distance itself from the ideas of the traditional museum, decides to include these marginal cultures in the decision- making process of the museum.

New museological ideas have begun to make the transition from operating within the discourse of colonialism to engaging in the politics of indigenous recognition (Butts, 2007).

As I have previously argued, the movement of the *Nouvelle Museologie* was concerned with the relation with the museum and its environment and the people of its community. Within the museological objectives of this movement is the aid of community development. Presentation and preservation of the heritage are considered within the context of social action and change. Thus, tangible and intangible heritage are resources that have to be considered and developed within the context of community improvement. The people of the community themselves have to take care of their own heritage, hence the term “popular museology”. Key concept is the “*réappropriation du territoire, du patrimoine, pour l’autodéveloppement individuel et collectif*” (Van Mensch, 1995: p.136)

Although the role of the museum is more likely to be recognized in terms of education and leisure, museums and galleries of all kinds have both the potential to contribute towards the combating of social inequality and, furthermore, they have the responsibility to do so. Sandell (1997) suggests that museums can impact positively in the lives of disadvantaged and marginalised communities and be a vehicle for empowerment to achieve the creation of more equitable societies.

“Museums can achieve these goals by acting at three levels: the individual, through a process of personal interaction; the community level, through partnership

and community development and the social, through communication and public display” (Sandell, 2007: p.97).

Collaborative projects are being developed in many museums as a way to speak directly to those groups in the population that have been excluded from wealth and power, as an example in Paris the Institut National du Patrimoine offers future curators training in cultural exclusion theory (Dufresne-Tassé, 2010). In Canada, the Museum of Contemporary Art and the Montreal Science Centre run a joint program in which children from disadvantaged neighbourhoods visit the museum and the centre to explore subjects related to both arts and sciences and produce a collective work (Dufresne-Tassé, 2010).

It is particularly in the developing world that a strong interest can be seen in a new orientation in museology (Schouten, 1987), most probably due to the social and economical inequalities that exist in these countries, as well as the present discrimination and marginalization of indigenous people. One of the strategies of change towards an inclusion of the multiethnic origins of the population and against social exclusion and marginalization are community museums (Burke, 2006; Camarena and Morales, 2006). Community museums are concerned with integrating the everyday life with other aspects of the community, such as the natural environment, economic, cultural heritage and social relationships (Fuller, 1992).

Simpson (2009) argues that indigenous peoples are using community museums as a way to preserve and renew cultural knowledge and practices *“as part of contemporary cultural revitalization processes and the affirmation of cultural identity”* (Simpson, 2009: p.122)

Chapter IV

Environmentalism, sustainable development and museums

This chapter constitutes the second part of my literature review. In it I will start by giving an historical account of the environmentalist movement, which gained worldwide strength during the second half of twentieth century. This will be followed by a report on conservation and sustainable development in the developing world. Afterwards I will focus on the notion of conservation issues in natural reserves. I will then move on to the consequences that environmentalist discourse has had in the development of exhibitions and activities in museums. To conclude, I will give a description and analysis of Eco and Community museums.

The importance of addressing these subjects at this point is due to two factors. On the one hand, given that the environmentalist movements' ideas had a great impact in the development of new museological ideas, such as eco and community museums. These museums have the objective of conserving not only objects but also their context, which in this case means their environment. Examining such subjects are also important given that this research aims to answer in what ways are museums helping communities to achieve a grater state of conservation of their natural environment through the establishment of sustainable activities.

4.1. The rise of the environmentalist movement

Environmentalism entered the political and social arena in response to the interest and concern, in the late 60s and early 1970s, about issues such as population growth, pollution of the environment, economics and technology and human health (Lear, 1999). One of the turning points in the rise of this movement, which now influences the social policy of every country in the world, was the publication of “Silent Spring” by Rachel Carson (1962). This book denounced the destruction of wildlife through the extensive use of pesticides, fungicides and herbicides in the United States of North America. Carson affirmed that:

“... the most alarming of all man’s assaults upon the environment is the contamination of air, rivers, and sea with dangerous and even lethal materials.”

(Carson, 1962: p.23)

By exposing detailed cases of contamination with fatal consequences not only for wildlife but for humans as well, Rachel Carson brought to light a key point in ecology: that everything in nature interacts with, and is interrelated to, many other elements in the environment. She argued that human beings have to acknowledge the importance of other organisms in the planet and have not only to understand the conditions in which a harmonic existence of species exists, but behave so that these conditions are not undermined (Carson, 1962). Moreover, she aimed to convince readers that governments could not be trusted in taking responsibility and therefore urged the general public to assume responsibility and act accordingly (Lear, 1999).

Ten years later international reports on environmental issues started to be published, most notably “Blueprint for Survival” (1972) and “Limits to Growth” (1972), which paved the road of the most cited international report on environmentalism: “Our Common Future”, also known as The Brundtland Report (1987).

In these reports, and many other publications, the environmentalist movement brought the idea and aspiration that with good administration the Earth could produce enough for everyone's needs without considerable impact in our natural resources (Nicholson, 1986). Since the late 1960s, environmentalism has been gaining importance and has expanded from the ideas of a small number of individuals, civil associations and organizations to the concern of nations and their governments (Davis, 1996).

The Convention on Biological Diversity (CDB) created at the Earth Summit in Rio de Janeiro in 1992 stated that its primary aim was to encourage and enable all countries to conserve biodiversity and to use its components sustainably in support of national development (Edwards, 2005). This Convention highlighted the idea that the loss of biodiversity and natural resources strangles social and economic development, the degradation of the land and the loss of our resources will impact the ability to support national development and sustain human well-being at a local and global scale.

The term "sustainable development" emerged in synchrony with the rise of the environmentalist movement, at the beginning of the 1970s. Redcliff (1992) claims that the first time the term was used in an international scenario was in the 1974 "Cocoyoc Declaration on the Environment and Development". However, other scholars argue that the term was used since the 1972 "Stockholm Conference on the Human Environment" (Allan, 2001). The most used definition of sustainable development was coined in the Brundtland Report (1987: p.43)³⁰ More than making predictions on the increasing environmental problems, the report concentrated on showing that a new model of economic growth is possible. One of the main points of this report was that the model of economic growth and conservation of the environment have to be compatible and can be made mutually dependent (Allan, 2001).

³⁰ Refer to chapter 1, page 24 for the definition of "sustainable development" used in this research.

Many environmentalists, whilst recognizing the importance and need of national and international legislation, believe that a sustainable future will only be achieved by acting at a personal or at a communal level. Community decision-making is now seen as a key factor in the achievement of sustainability (Davis, 2007). Gilbert (1990) states that this change of lifestyle and forms of generating resources cannot be mandated from above by government regulations and treaties, it has to be undertaken because people themselves want to make changes. These ideas have prompted the development of the model of community-based conservation proposed by the International Union for the Conservation of Nature (IUCN). This model provides a series of guidelines on how to improve the participation of the community in the conservation management plans with the idea of integrating conservation of the environment with sustainable use of the resources and the protection of cultural heritage, always encouraging local communities to administrate their own resources (Brown, Mitchell & Beresford, 2005).

Sustainability is a concept that has undoubtedly underlying tensions, most importantly because it tries to integrate conservationist and capitalist discourse. This is why it has been argued that the term sustainable development represents an oxymoron (Naredo, 1987).

“Sustainable development represents the marriage of developmentalism (the commitment to continued economic development) and environmentalism. Such a reconciliation is neither obvious nor straightforward – nor is without its critics, who see it as a centralizing approach, more concerned with business as usual than radical change” (Allan, 2001: p.32-33)

One of the responses to criticism of the term states that the necessary changes to reach sustainable development have more to do with facing social and political changes than with technologic advancement and economic growth (Mallorquin, 2012). The asymmetric power mechanisms of wealth distribution have to be reviewed as well.

Despite the ill-defined and self-contradictory definition of sustainable development, it remains a valid concept in terms of its sociological significance. As stated by Castree and Braun (1998: p.17): *“Discourses like “sustainability” are important to the extent that they organize our attitudes towards, and actions on, nature.”*

Precisely the tensions behind the term can in a certain manner serve as basis for the construction of environmental concerns, which take account of differing forms of producing resources, among which include notions of globalization, necessity of change, the importance of democracy and social justice, empowerment and participation, and last but not least, evocation of the crisis we are facing as a species (Allan, 2001).

It is precisely in this respect that this study praises the significance of sustainable development in regards to the social changes that the ecomuseums could provide to their communities.

4.2. Conservation and sustainability in the developing world

“In the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs”

(World Commission on Environment and Development, 1987: p.9)

Developing countries' economies are heavily dependent on living resources and the richness of their natural environments. Living resources are not only the main source of sustenance but also a major source of foreign income through export of goods (McKee & Tisdell, 1990). Some authors indicate that developing countries have huge economic, social and demographic pressures for growth, which threatens the conservation of their natural resources. (Tisdell, 1991)

In addition, conservation of the environment is a very urgent matter in developing countries given that a large proportion of the world's species exist only in developing countries. Most developed countries lie outside tropical regions, which concentrate a vast majority of the global biodiversity (Myers, 1979).

The loss of biodiversity in the tropics are due to four main reasons according to Tisdell (1991) the habitats of species are increasingly destroyed as countries in the developing world try to enhance their economic power, 2) through unsustainable harvesting practices of the human species, 3) humans are competing with other species for vital resources like water, food source and space at a greater rate than before, and 4) pollution and degradation of the habitat are also decreasing wildlife populations

In developing countries, environmental degradation responds mainly due to pressures from the expansion of populations and the need for exploitation of natural resources. Even when it is proven that benefits will be short-term and that damage on the environment will bring long lasting problems to local populations, it is impossible to prevent poverty-stricken populations to use these living resources (Tisdell, 1991).

The Brundtland Report (1987) points out four main challenges in the implementation of sustainable strategies: poverty, population growth, survival and economic crisis. Therefore it suggests that a sustainable model can only be achieved with the following strategic imperatives:

“reviving economic growth, meeting essential human needs, ensuring a sustainable level of population, reorienting technology and managing risk, merging environment and economics in decision-making” (Allan, 2001: p.40).

These challenges and consequent requirements for sustainability demand an emphasis in the marriage between social, development and environmental elements, perhaps as a way to suggest interdependence and compatibility (Allan, 2001). All of these challenges have a very strong presence in the developing world.

An asymmetry in power and the consequent inequality that determine the evolution of social relations in the Latin American region have generated in certain sectors a feeling of marginalization and exclusion, multiplying the discrimination and social exclusion (CEPAL, 2007).

In the last two decades, the Latin American region has reported on average an economic growth of 3%, however there has been no change in the tendencies of distribution of wealth (CEPAL, 2010; Bulmer-Thomas, 2003). This region presents significant income disparities between different social groups. As a result, we can see that for example almost 88% of the Amazonian population and Andean territories present ample deficits in basic resources, such as access to drinking water, lack of schools and housing facilities; in Mexico and Central America these disparities are most notable in zones occupied by indigenous populations (ECLAC, 2010: p.138). Nevertheless, inequalities are not exclusive of the rural areas, but they are also reported within cities and its periphery, almost in all of the Latin American region (Mallorquín, 2012).

Singer argues that the problem with countries in the developing world is not only economic growth, but also development. He defines development as growth plus change, which is social and cultural, economic, i.e. development is both quantitative and qualitative. The key concept in the achievement of development is the improvement in people's quality of life (Singer, quoted in Arndt, 1987: p. 89).

The World Conservation Strategy (IUCN, 1980) suggests that it is imperative to ensure that the people bearing the costs of conservation benefit directly from it. In order for these incentives to be real they cannot only be translated for example in ecotouristic activities, which are often directed only to certain groups in the population, but to provide better living conditions for all, i.e. improvement in roads, schools, hospitals, etc.

The report "Our Common Future" states that it is important to revive economic growth based on sustainability considerations as a means of conservation of

nature (World Commission on Environment and Development, 1987). It is not, therefore, only a matter of the broadening of the product/capital relation, but there is the need to develop public policies that reduce income gaps in the different social and productive sectors (Mallorquín, 2012). It is also not a matter of catching up with the production rhythm or pattern of developed countries but of ensuring policies that are inclusive and that guarantee income and good living conditions for the majority of the population. It is only then that sustainable development can be achieved in developing countries, given that with *“existing socio-economic structures and values, it is not easy to make economic growth and conservation compatibles”* (Tisdell, 1991: p.86).

4.3. Conservation of biodiversity in natural reserves

Both case studies in this thesis are concerned with indigenous populations whose living conditions have been affected by the creation of natural reserves in their territories, with different direct consequences, which I will discuss in chapters VI and VII of this manuscript. In this section I explore the creation of natural reserves for conservation of the environment and its consequences for local populations.

Although state governments and other political entities have approached conservation needs by the establishment of reserves and protected natural areas for many centuries, large scale expansion of the protection of natural environment has only occurred in the last few decades. These reserves often incur in lands with long-established indigenous populations (Orlove & Brush, 1996).

As the environmentalist movement started to gain political weight, protected areas started to expand and it quickly became evident that the US model of vast uninhabited parks could not be applied worldwide (Orlove & Brush, 1996).

In academic as in advocacy roles, anthropologists have argued for the participation of local populations in the planning and management of protected areas (Orlove & Brush, 1996). Their arguments have their basis in different claims, social justice

(poor and marginal populations that inhabit protected areas should not be the ones to bear the costs of conservation), human rights (inhabitants of protected areas have the same rights as all other citizens), as well as pragmatic grounds (without the consent of local populations, conservation cannot be carried out effectively) (Gibson & Marks, 1995; Heinen & Yonzon, 1994).

As Gibson and Marks (1995: p.2) point out:

“One effort to render compatible the goals of preserving endangered species and including resident populations was what Conklin and Graham termed the contemporary equation of indigenous resource management practices with Western environmentalism”

The idea that indigenous populations live in perfect harmony with their environment has its roots in long-standing traditions in Western thought (Colchester, 1994; Conklin & Graham, 1995) and are justified by three pieces of evidence: 1) the centuries long history of indigenous people inhabiting the entire planet suggests that the biggest threat to the environment does not come from small populations, 2) a detailed environmental knowledge that local people have, as well as environmental management practices that maintain healthy animal and plant populations and 3) the existence of religious or spiritual beliefs about plants and animals, which can assure commitment to conservation (Orlove & Brush, 1996).

However, some examples tell us this is not always the case and that sometimes indigenous peoples do not act as conservationists. To mention but a few: prehistoric species that were hunted to extinction (Steadman, 1995) and the famous cases of island populations, like Easter Island, where the ancient inhabitants, the Rapa Nui, have caused the extinction of several plant and animal populations since their arrival on the territory.

Regardless of the truth in these claims, we can see indigenous participation in conservation programs within reserves with a more pragmatic approach. As

Tisdell mentions, "*individuals damaged by conservation measures are likely to resist them*" (Tisdell, 1991: p.78). Conservation targets can more easily be achieved if reserve personnel and local populations engage in cooperative management and coordinate efforts. One example of this type of management comes precisely from a Mexican reserve, the Mapimí Biosphere Reserve in north central Mexico was declared mainly to protect the ecosystem of an endangered tortoise species. The reserve is successfully managed in cooperation with the small-scale cattle ranchers community that inhabit the lands. Ranchers, reserve personnel and scientists have found common objectives that benefit all, exchange favours with each other and work together towards the conservation of the area (Kaus, 1993; Orlove & Brush, 1996). Another example of cooperative management involves local aboriginal groups and personnel of the National Park Service working at the Kakadu National Park in Australia. In the face of threats of misuse and overexploitation of the resources by mining companies, local groups and park workers joint forces and now manage the reserve cooperatively in restoring wetland ecosystem (Hill & Press, 1994).

This co-management is also called community-based conservation (Western & Wright, 1994) in which cases communities are generally self-sufficient and obtain additional income from small-scale sale of other products.

It has been argued that some sort of compensation or advantage has to emerge for locals to engage with conservation activities. A real commitment of local populations can only be assured with an alternative means of support for those populations in question (Tisdell, 1991).

Ecotourism has been one of the answers; however this type of activities have also in some cases generated environmental problems and provide often lower, less reliable and more unevenly distributed resources than anticipated (Orlove & Brush, 1996), which also generates social problems. In addition, monetary retribution does not necessarily create lasting incentives for conservation (Orlove & Brush, 1996). However, indirect compensation in the form of investment for sustainable development can achieve both conservation and compensation of

farmers and other local groups (Altieri & Merrick, 1987; Brush, 1991; Oldfield & Alcorn, 1987).

In other cases, the management of reserves has sought to reduce human activity in the core of the reserve and have promoted commercial activities in the buffer zones and have relocated the inhabitants (Orlove & Brush, 1996).

Cooperative management sounds ideal for all parties involved; however it is not widely applied since the model faces many difficulties. First of all there are organizational incompatibilities between centralized state offices of conservation, NGOs, international conservation agencies and local populations. For example Andean peasants and, as we will see in my case studies, Mexican farmers hold assemblies for even minor decisions (Orlove, 1991; Orlove *et al.*, 1992). Other incompatibilities include for example Amazonian tribe leaders that only seem to advise instead of command the strategy in question (Conklin & Graham, 1995).

Furthermore, in several national parks there is a convergence of different ethnic or local groups, which is the case of both of the museums analyzed in this research, which can generate a series of difficulties for the access of resources. For example, in the Lake Titicaca National Reserve in Peru, conservation officials made distinctions between ethnic groups that inhabit in the core area of the reserve and those who inhabit its borders and although for conservation management terms this differentiation makes sense, they do not correspond to notions of spatial boundaries for local groups (Orlove, 1991).

Secondly, sometimes communication incompatibilities between locals and conservationists arise, these usually stem from social and economic differences between them or due to differences in national and minority languages. Likewise, on occasions local residents do not trust conservationists or personnel of the reserve, since they only work with them during brief periods and do not stay in their positions for a long number of years (Orlove & Brush, 1996).

We have seen here that anthropological studies have shown that participation of local population in the management of the reserves is not an easy task and is often hindered by lack of organization and communication and asymmetries of power within and among the communities involved. However, both in practical and in social terms, the inclusion of local inhabitants in the decision making process of the conservation plan of the reserve is considered the best option for all.

4.4. The environmentalist movement finds its place in the museum's galleries

*"We are all in the environment;
we eat it, we breathe it
and sometimes we even make museums out of it"*

Martinovich, (1990: p.47)

One of the objectives of this research is to evaluate the case studies of two ecomuseums in terms of sustainable use of the resources of the communities. It was therefore important to investigate the role that the environmentalist movement has had in museum practices in history. In this section I give a brief account on how the environmentalist movement has influenced museum's philosophy and practice. At the same time as the New Museology movement attempted to transform museums into more socially active and participatory places, the environmentalist movement started to gain worldwide impact.

Through the establishment of community based conservation initiatives, the engagement of local people (communities, indigenous populations) has been recognized as critical to the success of conservation efforts, which the participation of local institutions in the governance of natural resources has been recently acknowledged (Edwards, 2005). Arguably, then as part of the social institutions, museums are part of this movement to conserve the environment and manage our resources in the best possible way.

Davis (1996) argues that the awareness of the general public should be the first item to tackle in the agenda for the future wellbeing of the planet. Better-informed citizens can take reasoned decisions about their own behaviour and the behaviour of others. Museums, Davis (1996) affirms, should be involved in the education of the general public on environmental subjects and to achieve that they must change their typical approach to conservation, collection, interpretation and exhibition of objects and direct themselves towards an active participation in the debate of environmental dilemmas. Historically, Natural History museums have played an important role in the conservation of the environment, mainly through the establishment of biological collections that document biodiversity, by being a resource for scientific research and through educational activities and exhibitions on environmental subjects. In environmental terms, the museum is taking less neutral and more socially responsible roles. The conservation ethics of the environmentalist movement have influenced the philosophy, development and current activities of museums (Davis, 1996). Museum professionals have realized that these institutions could be key agents in the persuasion of its visitors to become involved in environmental issues.

The 10th General Conference of the International Council of Museums (ICOM) celebrated in Grenoble, France, in 1971 had the theme of "The Museum in the Service of Man, Today and Tomorrow". In it, a growing concern of the deteriorating environment was discussed. Furthermore, the importance of the museum as a valuable instrument in the conservation of the environment was highlighted.³¹

Modern examples of the environmentalist perspective permeating into museum include the Museum Victoria in Melbourne, Australia, and which counts within its staff a senior curator of sustainable futures which is in charge of the program "Water Smart Home", a community-based project that educates the public in reducing water consumption (Janes, 2010).

Another example of how environmental awareness is permeating museums can be

³¹ The resolutions of this conference can be found online at <http://icom.museum/the-governance/general-assembly/resolutions-adopted-by-icoms-general-assemblies-1946-to-date/grenoble-1971/> (Accessed 25th August 2012).

seen in the work of The Commonwealth Association of Museum, an international NGO that is committed to engage museums with their societies and communities, with attention to pressing matters, among which are the conservation of heritage, biodiversity and environmental sustainability (Janes, 2010).

Davis (1996) affirms that it would be presumptuous to regard museums as major players in environmental policy making. He believes, however, that they have played a support role in the conservation scene through the establishment and maintenance of collections and records documenting biodiversity and through the promotion of cooperative research. Also, through their educational activities and environment-related exhibitions, museums have played a part in raising environmental awareness, especially among children and teenagers.

The concept of ecomuseology is based on prioritising participation, expansion of cultural heritage and revalorization of territoriality (Moutinho, 2010). Davis proposes that in respect to the subject of the role of the ecomuseums in sustainability, the following questions need to be addressed:

“Are ecomuseums a model of process and practice that will sustain local intangible and tangible heritage? Can ecomuseums aid the sustainability of local communities by providing tangible, intangible or economic benefits?” (Davis, 2007: p. 199)

Both museums I analyze in the case studies are located in environments of high biodiversity, within lands declared Biosphere Reserves by the Mexican government, thus their conservation is of high importance. Moreover, both communities suffer from poverty and have been faced with further economic challenges during the establishment of the reserves. It is in this respect that my interest is to inquiry whether the community museums in rural communities in Mexico have fulfilled an important role in the conservation of the environment through the establishment of sustainable practices of resource exploitation.

4.5. Eco or community museums

“... there are multiple ways of representing nature and the environment, from the scientific to the mystical. Rather than a fixed entity, the environment is a fluid concept which is both culturally grounded and socially contested”
(Hannigan, 1995: p.109)

As a result of the impact of the conservation movement in museums, the rise of new environmentalist initiatives began to appear in the museums' domain. Ecomuseums, a resulting initiative from the New Museology movement, are a way in which museum professionals responded to this rising need in society. The term ecomuseum was coined at the beginning of the 1970s at the 10th ICOM International Museum Conference held in Grenoble, France, by Georges Henri Rivière and Hugo De Varine (Alonso- Fernández, 1999). Rivière (1985) enlists in his definition of ecomuseum the following series of characteristics for these institutions: an ecomuseum is conceived, formed and managed by a local population, it is a mirror in which the community views itself with the aim of finding their own identity, and it is also a mirror that the local population holds to its visitors so they may thus have a glimpse of their life. An ecomuseum, Rivière continues, is an expression of man and the natural environment, it places man in nature and also shows both nature in its wildness and its transformation at the hands of humans. Rivière describes as well an ecomuseum as an expression of time that can be traced back in time but also offer views of future possible scenarios. An ecomuseum can be a reinterpretation of space, a laboratory, a school and a conservation centre (Rivière, 1985).

A more recent definition was given by the *Long Network of Ecomuseums* in Europe, which states that

“an ecomuseum is a dynamic way in which communities preserve, interpret and manage their heritage for sustainable development. An ecomuseum is based on a community agreement” (Declaration of the Long Net Workshop, 2004 quoted in

Corsane *et al.*, 2009)

Ecomuseums were the answer to the necessity of renewal of traditional museology and were conceived as places where the interrelationships between museum and environment were introduced into museum planning and development. Over the years, they refined and produced different definitions of the term, but always making special emphasis in the close ties between environment and human beings (Donghai, 2008). For example, Maggi and Falleti (2000) argue that ecomuseums aim to focus on the bond between community and place and its environment, making an attempt to its preservation through direct action.

According to Perella and collaborators, two tendencies can be identified in ecomuseum theory and practice; *the environmental ecomuseum*, which focuses mainly on the environmental and cultural aspects of the community and has as objectives the conservation of the natural environment and the promotion of environmental education; *the communitarian ecomuseum*, which considers the museum as a potential bottom up tool for social development and management of local resources and heritage (Perella, Galli & Marcheggiani, 2010: p.439).

Davis (2011) states that the ecomuseum ideal rests on three main pillars: *a sense and spirit of place*, given by an integrated approach to presenting and conserving natural and cultural heritage, *a very strong community involvement* through public participation, the implementation of democratic decision making processes and finally *flexibility* to adjust to the uniqueness of each project, in order to respond more efficiently to the needs and historical, social and environmental contexts of the community.

Because these institutions seek to preserve aspects of tangible and intangible heritage of a defined geographical area inhabited by a certain community, the term ecomuseum can be applied to diverse projects under a different number of circumstances. As Donghai (2008: 38) states “the idea of the ecomuseum has universal value, it exists in extremely varied forms” Each ecomuseum is developed

in response to its own particular setting and will therefore all differ according to the specific culture, environment and situation of the society they present.

For example, the Ha long Ecomuseum project in Vietnam encompasses an entire bay area as a living museum and reflects on the relation between human populations and natural environment through time (Galla, 2005), whereas the Gavalochori Museum centers in a house in a small town in Crete, Greece and conserves material objects linked to the village’s ancient culture (Corsane, et al., 2009). However is not only the geographical extension but the motivation behind an ecomuseum that make this concept so malleable, the Lihu Ecomuseum in China, as the Community Museum of Santa Ana del Valle in Mexico are dedicated to the conservation and representation of indigenous minorities (Davis, 2008), while the Kounotori Ecomuseum in Japan is dedicated to the conservation of the Japanese stork (Davis, 2007) and the Ekomuseum Bergslagen in Sweden is an open-air museum that extends 750 square kilometres and aims at linking more than fifty cultural sites in the area (Davis, 2005)

One might ask therefore: what do all these ecomuseums have in common?

Before enlisting the characteristics that ecomuseums have in common, it is necessary to highlight the differences that they have with the traditional museum. These differences have been illustrated in the following diagram by Rivard (1984; 1988) which has been quoted by many other authors (Davis, 1999; Corsane, 2006; Boylan, 2006; Stefano, 2012)

Table 7. Comparison of characteristics of traditional and ecomuseums (Rivard, 1984; 1988)

Traditional museum	Ecomuseum
<ul style="list-style-type: none"> - Building - collection - expert staff - public visitors 	<ul style="list-style-type: none"> - Territory - Heritage -Memory - Population

This diagram is almost identical to the comparison of traditional museology with new museology developed by Alonso-Fernández (1999: p.95)³². However Rivard has added the role of the expert staff in traditional museums in contrast to the concept of memory, which he adds to the definition of ecomuseum. With this he is acknowledging the inclusion of the population in the decision making process that ecomuseums are presenting and with this inclusion he is validating traditional knowledge and collective memory as a key factor in ecomuseum philosophy.

In traditional museology, collections were held in a closed building, where researchers were able to conduct factual enquiries, isolating them from the world outside. One of the crucial characteristics of traditional museums are its walls, they served the purpose of enabling the researcher to withdraw from the world in order to investigate it. (Arnold, 2006) In this view, there is a rupture of the museum and its collection with the society or with the community that the museum wants to inform and entertain. This notion is completely opposed to ecomuseums where the building that houses the collection is no longer such an important feature and the realm of the museum is the territory, the community and its environment. They encompass a defined geographical area with distinctive landscape, cultural and heritage features that are recognized, protected and interpreted by local communities and people.

As Van Mensch points out: *“The museum can be anywhere, and is anywhere and everywhere within a specified territory”* (Van Mensch, 1995: p.136)

In the new ecomuseum model, the collection has been replaced by the heritage, which includes both the tangible and intangible, the movable and unmovable, and the natural and cultural. As mentioned before (chapter 1, page 19), I am using the definition of heritage given by UNESCO in the “Convention Concerning the Protection of the World Cultural and Natural Heritage” in 1972, where for the first time natural and cultural traits were also considered. Moreover, there is a strong emphasis in democracy and inclusiveness; decision-making authority is given to

³² Refer to Table 6 page 78.

community members. This implies recognition of their expertise with regard to their heritage and knowledge of the designated territory (Stefano, 2012).

The concept of ecomuseum has particularly influenced the museum world by manifesting four major orientations (Davallon *et al.*, 1992). First of all, ecomuseums have innovated by incorporating the population into decision-making processes. Secondly, these institutions have united the notions of time and space. Thirdly, ecomuseums have brought participation in reflection on development by assisting a person or population. Finally, ecomuseums praise the conjunction of interdisciplinarity, based on the idea that the study and interpretation of the relationship of man and his environment require interaction of the methods and results of several social and scientific disciplines.

Peter Davis³³, defines the nature of an ecomuseum in a simple sentence. Davis (2007: p.199) claims ecomuseums are *“a community-led heritage or museum project that supports sustainable development.”* He illustrates his idea with the metaphor of an ecomuseum as an integrated “necklace” model, a series of beads where each element within the museum is connected to another and is equally important as the rest. He explains his model as follows:

“This ‘necklace’ model helps us to understand that by combining the attributes of regions- their cultural sites and associated histories and themes, vernacular architecture, traditions, dialect, memories – the ecomuseum brings together those elements that make places special” (Davis, 1999: p.240)

³³ Emeritus Professor at Newcastle University, Peter Davis has more than twenty years researching museums and has published more than 50 articles on the subject. For a full biography and list of publications refer to <http://www.ncl.ac.uk/sacs/staff/profile/peter.davis> (Accessed, 23rd November 2014)



Figure 6. "Necklace" model for the ecomuseum (Davis, 1999: p.240)

Despite all these efforts attempting to provide useful definitions of ecomuseums, authors like Hawke consider that a much more work is needed to reach definite model.

As she puts it:

"the interpretation of ecomuseum paradigm in practice has proved fluid, diverse and inconsistent. For this reason, efforts in recent years have been made to assess how far ecomuseums achieve their original philosophy." (Hawke, 2010: p.208)

Many theorists have provided lists of characteristics that propose to define ecomuseums, such as *in situ* conservation of natural resources, a democratic community based approach, promotion and conservation of cultural heritage,

among others (Hamrin & Hulander, 1995; Davis, 1999; Corsane, 2006).³⁴

Davis (1999: p.228) describes ecomuseums as community-lead heritage conservation projects that:

- Adopt a territory that is not necessarily defined by conventional boundaries.
- Adopt a “fragmented-site” policy, which is linked to *in situ* conservation and interpretation.
- Abandon conventional views of site ownership; conserving and interpreting sites via liaison and cooperation.
- Empower local communities, involving local people in museum activities and in the presentation and development of their cultural identity.
- Have potential for interdisciplinarity and holistic interpretation.

Further lists have been developed to provide a method to assess ecomuseum practice against philosophy (Hamrin & Hulander, 1995; Borrelli *et al.*, 2008, Corsane *et al.*, 2007). Corsane (2006a & 2006b) has developed the most extensive list of indicators aimed to evaluate the performance of institutions against the “ecomuseum ideal” (Corsane, 2006a: p.405). The twenty-one indicators proposed by Corsane are as follows:

1. An Ecomuseum is initiated and steered by local communities.
2. Should allow for public participation from all the stakeholder and interest groups in all the decision-making processes and activities in a democratic manner.
3. Stimulate joint ownership and management, with input from local communities, academic advisors, local businesses, local authorities and government structures.

³⁴ The list of indicators of the ecomuseum ideal proposed by Corsane (2006) can be found in the methodology section of this thesis.

4. Place an emphasis on the processes of heritage management, rather than on heritage products for consumption.
5. Encourage collaboration with local craftspeople, artists, writers, actors and musicians.
6. Depend on substantial active voluntary efforts by local stakeholders.
7. Focus on local identity and “sense of place”
8. Encompass a “geographical” territory, which can be determined by different shared characteristics.
9. Cover both spatial and temporal aspects, where, in relation to the temporal, it looks at continuity and change over time rather than simply trying to freeze things in time.
10. Takes the form of a “fragmented museum” consisting of a network with a hub and antennae of different buildings and sites.
11. Promotes preservation, conservation and safeguarding of heritage resources in situ.
12. Gives equal attention to immovable and movable tangible material culture, and to intangible heritage resources.
13. Stimulates sustainable development and use of resources.
14. Allows for change and development for a better future.
15. Encourages an ongoing programme of documentation of past and present life and people’s interaction with all environmental factors (including physical, economic, social, cultural and political).
16. Promotes research at a number of levels-from the research and understanding of local “specialists” to research by academics.
17. Promotes multidisciplinary and interdisciplinarity approaches to research.
18. Encourages a holistic approach to the interpretation of culture/nature relationships.
19. Attempts to illustrate connections between technology/individual, nature/culture, and past/present.
20. Provide for an intersection between heritage and responsible tourism
21. Bring benefits to local communities, for example, a sense of pride, regeneration and/or economic income.

This synthesis provides with a very thorough characterisation of ecomuseums, and as these constitute very diverse projects, Corsane clarifies (2006a) that not all ecomuseums will present all these traits and the fact that one museum does not present all indicators does not mean that they cannot be classified as “ecomuseum”. This list serves both as an indicator of how strongly an institution fulfils ecomuseum’s aims, and as a tool in its characterization.

CHAPTER V

The Mexican context

This chapter constitutes the third part of my literature review. In it I will start by giving an account of the diversity, both natural and cultural, that Mexico holds. This will be followed by a historical report on the indigenous groups of the country and a brief description of the social geography of contemporary indigenous groups. Subsequently, I will focus on the history of museums in Mexico and to conclude, I will give a description and analysis of community museums in Mexico.

5.1. Mexico: a biodiverse country and a pluricultural society

Mexico is the 14th largest country in the world with almost two million square kilometres. According to official statistics it is the most populous Spanish speaking country in the world³⁵. However, many of his inhabitants speak another language apart from Spanish, and many do not even speak Spanish at all. Mexico has around 75 indigenous groups that form 62 indigenous ethno-linguistic groups³⁶, which makes it a multiethnic and pluricultural society (Fernández *et al.*, 2006). Mexico's ethnic diversity derives from the presence of the numerous ethnic groups that inhabited the territory in precolombian times and the subsequent mix with the European colonizers and many other groups that have migrated to the country.³⁷

The diverse geography of the territory explains the origin of the broad variety of ecosystems in Mexico. From the tropical rainforest of the Lacandon Jungle in the southern state of Chiapas to some of the driest and hottest deserts in the world in the northern states of Sonora and Baja California, Mexico presents many different ecosystems: the temperate forest, the mountainous cloud forest, savannah, tropical dry forest, wetlands, lagoons, coral reefs and mangrove swamps (Carabias, 1995). Plants and animals have adapted to different climates giving way, as mentioned before, to a very high biodiversity (Flores Villela & Gerez, 1994). In addition, all the indigenous groups present in the country are living with very strong ties with the environment (Benítez Díaz, 1998). Within the biological diversity and number of different ecosystems of Mexico, *“a rich ethnic inheritance has lived, used and modified the natural habitats in different ways through time”* (Dávila *et al.*, 2002: 421).

³⁵ Official statistical data of the country can be found in the website of the National Council of Population (Consejo Nacional de Población) <http://www.conapo.gob.mx/es/CONAPO/> or in the website of the National Institute of Statistics and Geography <http://www.inegi.org.mx/default.aspx>.

³⁶ A complete catalogue of the ethno-linguistic groups of the country has been published by the National Institute of Indigenous Languages (Instituto Nacional de Lenguas Indígenas) in 2005. The catalogue is available for download at <http://www.inali.gob.mx/clin-inali/> (accessed 9th September 2012).

³⁷ The mix of indigenous and European blood is called “mestizaje”.

Each ethnic group with its own history and traditions, and in accordance to its needs, has shaped the environment it inhabits. This strong bond enhances the richness of the country and constitutes a very important objective for the conservation of both natural and cultural patrimony (Dávila *et al.*, 2002).

The two museums that are going to be analyzed in this study are located in greatly biodiverse areas of the country. On the one hand, the museum of Frontera Corozal is found in the Lacandon Jungle, the biggest and most diverse tropical rainforest in Mexico situated in the southeast of the country. On the other, the museum of San Juan Raya is found in the Tehuacán-Cuicatlán Valley, a desert area in the middle of the country that has the greatest biodiversity of desert flora in the world, situated in the centre of the country (Dávila, *et al.*, 2002).

Mexico is a land of contrasts. The country is regarded by UNESCO as first in the Americas in number of World Heritage Sites³⁸, which is reflected in the amount of tourists the country receives each year³⁹. It is regarded by the World Bank as an upper-middle economy⁴⁰ and was the first Latin American country to be part of the Organisation for Economic Co-operation and Development (OECD). However, in spite the presence of these indicators, which suggest that Mexico's economy is thriving, the country still presents a high percentage of poverty. According to official data, the percentage of the population that live in poverty increased from 44.5% to 46.2% between 2008 and 2010. This constitutes a total of 52 million people. In the same years, the number of people living in extreme poverty was 11.7 million. The poverty measurement indicators used by the National Council for the Evaluation of Social Development Policies (Consejo Nacional de la Evaluación Política de Desarrollo Social) include aspects like access to education, to food, to

³⁸ The UNESCO World Heritage Sites list, published online, recognizes 32 sites in the Mexican territory, making it the sixth place worldwide and first place in the Americas. Available from: <http://whc.unesco.org/en/list> (Accessed June, 3rd 2013)

³⁹ The United Nation's World Tourism Organization issues a report on tourism worldwide data each year. In its report on tourism highlights of the year 2011, Mexico is listed as the tenth most visited country in the world. Report available from: <http://www2.unwto.org/publications> (Accessed June, 3rd, 2013)

⁴⁰ The World Bank divides countries based on their economies according to 2012 GNI per capita. The groups are: low income, \$1,035 or less; lower middle income, \$1,036 - \$4,085; upper middle income, \$4,086 - \$12,615; and high income, \$12,616 or more. Available from: <http://data.worldbank.org/about/country-classifications/country-and-lending-groups> (Accessed 4th June, 2013)

health services, to social security and access to housing quality and services⁴¹. An important indicator of the desperate state of poverty in which many Mexicans live is the number of migrants that each year try to cross the border to the United States. The Centre for Immigration Studies' survey of 2010 reports almost 12 million Mexicans living in the neighbouring country, the majority of which are unregistered (Camarota, 2012).

Given that both the museums that conform the case studies for the analysis of this dissertation concern two indigenous communities in Mexico, in the next sections I will expand further on the subject of native people in Mexico. A full historical account of the ethnic groups in Mexico will be presented, as well as an analysis on the current social geography of the population in question.

5.2. A brief historical account of indigenous groups in Mexico

The indigenous groups currently living in Mexico are descendants of diverse ethnic groups that settled in various regions of Mesoamerica (Warman, 2003). The social, cultural and ethnic plurality of the groups living in ancient Mexico is the foundation of the diversity of indigenous groups we see today. The indigenous identity of Mexico comes from the Mesoamerican cultures (Bonfil Batalla, 2008), however this should not lead us to understand the current indigenous groups as mere heirs or guardians of the ancient cultures. This vision has been criticized because it presents indigenous people as mere relics of the past with no right to renovate and change, and regards indigenous culture as a static phenomenon that has to be conserved as it was five centuries ago (Navarrete, 2008).⁴² The ancient pre-Columbian cultures adapted to the arrival of the Spanish and as any other living culture they have kept evolving and adapting to current times.

⁴¹ The methodology and results of the poverty census in Mexico are published online by the Consejo Nacional de la Evaluación Política de Desarrollo Social (National Council for the Evaluation of Social Development Policies). Available from: <http://www.coneval.gob.mx/Medicion/Paginas/Medici%C3%B3n/Metodologia-en.aspx>. (Accessed June 1st, 2013)

⁴² As it has been discussed in chapter three, this vision of stagnant of death cultures regarding indigenous peoples has been a present issue in traditional museology that new practices aim to change.

The process and impact of the Spanish conquest, which began in 1519 and lasted for three centuries until the independence was declared in 1810, was different in each region and for each group (Navarrete, 2008). However, what was common to all those indigenous groups was that they all underwent various forms of extermination, displacement, discrimination and racism, since the arrival of the Spaniards (Bonfil-Batalla, 2008).

Furthermore, with the arrival of the Spanish conquerors in the sixteenth century a new religion was imposed to the many native groups that inhabited what is today the Mexican territory. The beliefs of the indigenous were eradicated or adapted to fit with catholic beliefs; as a result, the country now has an overwhelming Catholic majority making up 82.7% of the population (Bonfil-Batalla, 2008). The indigenous groups follow mostly the catholic faith; however there is a strong syncretism of catholic and native traditions.

Despite the great diversity of indigenous groups in the country, for the Spaniards they were all practically the same, and were regarded as inferior beings. In fact, the conquerors even doubted they had a soul as they professed pagan religions and had practices perceived as barbaric (Bonfil-Batalla, 2008). Indigenous people were outcasts of civilization and reasoning (Warman, 2003). Thus, they had to be civilized and evangelized, their cultures had to be “westernized”. This view established the practices against indigenous in Mexico for the next centuries and has persisted up to these days.

Some of these groups were more successful than others in conserving their identity and culture, for example groups that were living in zones of difficult access like the Lacandones in the Lacandon Jungle or the Huicholes in the desert of Nayarit managed to maintain their traditions more successfully than the Aztecs, which were occupying the central area where Mexico City lies today. However, all indigenous groups were evangelized to some extent and their old beliefs mixed with the new ones (Navarrete, 2008).

After the Independence movement, that was lead by the *criollo* (descendants of Spaniards but born in Mexico) and *mestizo* (person of mixed race) élite, all citizens

were declared equal by law. However, in a country with so many different cultures, power asymmetries ruled everywhere and equality was a very difficult goal to achieve. Moreover, the idea of equality for the elites in power meant that everyone should have the same culture, speak Spanish and practice catholic religion (Navarrete, 2008). Under this idea, native people were still forced to conform to other ideals than their own. This meant that, although the newly acquired independence was beneficial for some, indigenous people were mostly marginalized and neglected (Navarrete, 2008; Warman, 2003; Bonfil-Batalla, 2008).

Since the recognition of Independence, the indigenous past of the country has been consistently recognised, at least rhetorically, by most governments as a reason for national pride. However, at the same time, indigenous people in the present, the direct descendants of those that were proudly remembered, do not enjoy the same rights as other citizens (Gilly, 1997)

Florescano (1996) gives an account of the relationship of indigenous people and the government and states (Mexico is a federal republic) during the past two centuries. In Florescano's view, governments have revived similar methods as the Spanish conquerors: trying to impose a more westernized culture as a superior narrative on to the natives with all its values and laws. The result of these measures produced a profound economic, social and cultural division between indigenous and the rest of the Mexican population (Florescano, 1996). To illustrate this inequality further, the next section provides an insight into the social geography of indigenous groups in the Mexican territory.

5.3. Social geography of indigenous people in Mexico

Both museums that I present as case studies in this research are administered by indigenous communities in rural Mexico. In this section I give a general view of the current social, political and economical situation of indigenous groups in Mexico and I argue that the current situation of the ethnic groups in the country has to be taken into consideration and is relevant when analyzing if the community museums are making any difference in social terms.

There are around 10 million indigenous people in the country (Fernández *et al.*, 2006), which places Mexico as the Latin American country with the largest indigenous population (Brysk, 2000). There are profound differences among the indigenous groups in the country. Each one has its own history, culture, traditions, language and other characteristics that define them and form their identity. The 62 ethnolinguistic groups do not come from the same ancestor, they have entirely different languages, unintelligible between them; there is not such thing as an indigenous religion, although many share a catholic belief; the country's indigenous groupings present a multicultural kaleidoscope (Warman, 2003).

It is, therefore, difficult to make generalizations and talk about the indigenous population in Mexico as a whole. It is more accurate to state that in Mexico there are many groups with different cultures and lifestyles, of which some are indigenous and some are not (Navarrete, 2008).

The Mexican Constitution declares that Mexico is a multicultural nation and the principles and obligations for the recognition of economic, political, cultural and social rights of indigenous people are established (Fernández, *et al.*, 2006). Nonetheless, Moreno Figueroa (2010) considers that the majority of Mexicans have an openly racist view of indigenous groups. They are associated with poverty and illiteracy; being an "indio" is synonymous with being poor and uneducated. This association is a continuation of the racist views that Spaniards had towards indigenous people during the years of domination. Today, although racist preconceptions are almost excluded from the laws, society continues to have

practices, beliefs and customs that are profoundly racist and discriminatory towards these groups (Moreno Figueroa, 2010).

Indigenous people are in general, among the poorest and most socially marginalized groups in Mexico. According to the INEGI (The National Institute of Statistics, Geography and Information Technology), more than 90% of indigenous people in the country are considered extremely poor and nearly 80% of indigenous children are malnourished (Fernández *et al.*, 2006). Currently, most indigenous people live in rural areas and isolated communities that have little access to public services such as running water, electricity, sewage systems, schools and health facilities among others (see Table 8).

Today's problems have their origin in the establishment of a cast system during colonial times, in which a westernized culture subordinated a vast number of indigenous cultures. This subordination claimed ideological superiority of the western culture over indigenous ones (Bonfil Batalla, 2008). This has marked the social dynamics between governments, *mestizo* society and indigenous people for the past five centuries. As a consequence, we can see this social inequality not only in Mexico, but in all the Latin American territory that was once a colony to Spaniards or Portuguese, "*Latin American Indians generally are concentrated in the rural and informal sector; they have little access to credit, underdeveloped human resources, and restricted geographic and occupational mobility*" (Brysk and Wise, 1997: p.77).

Table 8. Statistical data on indigenous groups in Mexico. Source: Fernández, et al. (2006)
****Around 70 pesos (£ 3.08 approximately).**

Total Population in Mexico	103 263 388
Indigenous Population	10 253 627
Percentage of total population	10.5%
Ethnolinguistic groups	62
Indigenous language speakers	6 044 547
Monolingual percentage	16.7%
Percentage of illiteracy in indigenous population	27.3%
Absence in schools of children from 6 to 14 years old in indigenous population	13.0%
Percentage of Indigenous population earning less than 2 minimum salaries per day**	53.5%
Houses without running water in indigenous communities	36.1%
Houses without sewage system in indigenous communities	59.5%
Houses without electricity in indigenous communities	17.0%
Houses without flooring in indigenous communities	43.7%

Historically, the way of life and traditions of indigenous people have been considered as opposed to the ideas of progress and modernity (Florescano, 1996). Vázquez-Flores (2011) carried out a journalistic review to analyze how discourse regarding indigenous people has been constructed through time. In her research she notes that in the last years of the nineteenth century indigenous groups were seen as an obstacle to establish a modern country, indigenous people were considered second class citizens and were not taken into account in the development of the country. Vázquez-Flores (2011) also mentions that a hundred years later, at the end of the twentieth century indigenous people are still considered inferior, even though the discourse strategies have changed and the press talks about integration instead of eradication, indigenous groups are not considered savages but unable to adapt to the modern world. The words have changed but the content is still discriminatory (Vázquez-Flores, 2011). Indigenous cultures of the past are proudly remembered by the modern Mexicans, but this admiration and respect does not extend to indigenous groups in the present (Navarrete, 2008; Fernández *et al.*, 2006).

Many programs have been developed to “integrate” the indigenous populations to the western liberal economic model (Fernández *et al.*, 2006). The failure of most of these integration programs of economic and social development has been due to the fact that the policies are made from outside or according to the “top down”

approach. Politicians have developed these initiatives without taking into account the local necessities declared by the indigenous communities (Navarrete, 2008).

As a response to this situation, indigenous groups have established many strategies of resistance. After the collapse of the Mexica empire, Mesoamerican civilizations were reduced, but managed to survive and resist the conquerors (Warman, 2003). Faced with the imposition of the Spanish regime, indigenous people sought to defend their traditions, customs and values. To achieve it several strategies were used, from open armed resistance movements, veiled resistance where “pagan” practices were carried out in a clandestine manner, to negotiated resistance, where indigenous groups gave up some of their traditions, but also gained some privileges. (Jan de Vor quoted in Gilly, 1997)

The struggle of indigenous rebellions against the state government started due to land occupation, but soon expanded to other spheres: political, symbolical and ideological. The underlying issue to the repression and discrimination is that ever since the Spanish conquest, the groups that have been in power, political, economic, ideological, have sustained models of progress in which indigenous groups do not fit.

A recurrent topic in the demands of indigenous groups resisting oppression and discrimination is that laws have to apply to everyone without ethnical discrimination; that the land has to be accessible to everyone, that their communal lands cannot be on sale and that no ethnic group can abuse another one with impunity (Joseph, 1988)

A person’s connection with a physical area is related to the memory of the ethnic territory that historically belonged to them. On the other hand, the land is also part of them; in this conception man and nature are deeply related. In this view, a harmonic relationship with nature can be a successful alternative to exploitation of the land and loss of biodiversity (Bonfil Batalla, 2008). This view is relevant for my investigation, because I enquire whether community museums have a role in the relationship with man and nature. Furthermore, this connection with an area or

“sense of place” is mentioned amply in the ecomuseum philosophy by Peter Davis (1999).

Indigenous rebellions are events that sometimes have different immediate motivations and justifications. However, deep inside their struggle they all share the same reason, their will and right to be. The common substrate of their identity is their land, the territory with which they identify themselves (Gilly, 1997).

Perhaps the most well known example of an indigenous uprising in recent years happened in the southeastern state of Chiapas, Mexico. The Zapatist Army of National Liberation (Ejército Zapatista de Liberación Nacional, acronym EZLN) entered the political and social arena when on the 1st of January 1994, around 2,000 of its members attacked four towns in the mountain region of Chiapas. According to Brysk and Wise (1997) the uprising was caused by governmental failures of economic and political liberalization:

“The Chiapas uprising served as a dramatic reminder of the disruptive potential of groups marginalized by adjustment and the growing incidence of ethnic conflict in Latin America” (Brysk and Wise, 1997: p. 77)

The Zapatistas stated from the beginning that they had no military intentions, but wanted to create a space that allowed them to express their demands to the government, they wanted to be heard (Gresh, 2009). The indigenous zapatista communities do not want to assume themselves as the past of modern Mexican society or to integrate themselves to the neoliberal model, they want the right to be different, and to keep the way in which they organize themselves socially.

The Zapatista movement quickly gained a lot of support from civil society in México and the world. With pressure by the national and international civil society, the Mexican government pursued a policy of negotiation. As part of the negotiation between the EZLN and the Mexican government, a series of agreements were signed on the 16th of February 1996. However, the signing of the agreements did not provide a solution to the conflict and most of the demands of the EZLN have not been fulfilled.

After the failure of the agreements, the EZLN created 32 autonomous communities or municipalities in the mountains of Chiapas and have ever since tried to implement their demands themselves without the government support. They have managed to improve their quality of life, they have a stronger sense of identity and dignity, and most importantly, they have left the marginalized place they were living and are now being heard by civil society in and outside Mexico (Cleaver, 1998).

According to the journalistic study of Vázquez-Flores there is a change of discourse after 1994, the year of the Zapatist uprising. Indigenous groups started to be regarded as *“capable of taking political initiatives and taking control and autonomy of their territories”* (Vázquez-Flores, 2011: p.35).

Pluricultural societies, like the Mexican, must ensure that all their citizens have the same rights and opportunities and therefore have to plan their development models through the egalitarian articulation of differences between the different cultural and ethnic groups. The recognition of the differences in social groups is required, a world in which many worlds are possible (May-Correa, 2005). It is therefore imperative, that Mexico establishes policies and initiatives that recognize and celebrate multiculturalism (Valencia & Rubio, 2004).

It is, in this sense that I explore the role that communal initiatives as self-sustainable tools that can potentially help the communities to administer and conserve their own cultural and natural patrimony, acting in this way as factors for social improvement.

5.4. History of museums in Mexico

In the previous chapter, I discussed the issue of colonialism and the impact it had in the establishment of museums in the emerging colonies. I will now examine the specific case of the history of museums in Mexico. Mexico's archaeological, historical, artistic, ethnologic and natural patrimony constitutes a central element in its identity as a nation. However, it is a nation where different cultures coexist, adapt to change and evolve. The socio-cultural landscape has set a difficult task for the conservation and communication of its heritage, given the absence of a singular heritage as such.

The creation of museums in Mexico has always served the interest of the ruling elite, to forge a sense of nation and identity in the population. However, given the multiethnic origin and the social disparities, some sectors of the population have been left out (Burke, 2006) and have to find strategies to be represented and to conserve their patrimony. One of these strategies is the establishment of community museums (Camarena & Morales, 2006).

The museological tradition in Mexico begins during the Colonial Period (1521-1821). It was brought to the country along with the Spanish settlement (Burke, 2006). The first collection on display in the country belonged to the Academia de San Carlos, which was the Academy of Fine Arts in Mexico City, established in 1783-1785 (Rico Mansard, 2004). A few years later, in 1790, the Natural History Museum in Mexico City and the National Botanical Garden were put together with the collections resulting from a series of scientific expeditions ordered by King Carlos III of Spain (Rico Mansard, 2004, Florescano, 1997).

What is interesting and different about the conservation and display of archaeological pieces in Mexico is that the historical interest in the evidence of the indigenous past in the whole Mesoamerica occurred when religious beliefs of the native people were still alive, despite the imposition of Catholicism (Burke, 2006; Florescano 1997). So, during the 18th and 19th Century, Spaniards and Creoles were looking at archaeological remains as objects of nationalistic inspiration, while

indigenous people were still worshipping them, mostly in a clandestine manner, and continued to do so even with pieces exposed in a museum (Burke, 2006).

Until the 1990s, the legislation on the conservation of archaeological remains did not admit that the archaeological pieces are religious ornaments only historical monuments (Escalante Betancourt, 1998). This phenomenon characterizes what has been happening in the legislation of heritage in Mexico, where the indigenous past is being appropriated for nationalistic pride and inspiration, but at the same time, denying and degrading the habits, lifestyles and religious beliefs of the indigenous groups in favour of a westernized culture (Bonfil Batalla, 2008). According to Bonfil Batalla, most museums in Mexico still carry a colonialist view in their collections and their display.

The National Museum was created in 1825 after the War of Independence (1810-1821). Despite the unstable political period that the country was undergoing, the museum enjoyed a great era of development until 1910 (Burke, 2006). During the 19th century many of the main cities created regional museums as part of an educational campaign led by the government (Burke, 2006). However, these museums were built with the same colonial or Eurocentric perspective as the ones built by the Spaniards. The museum institution continued to serve the cultural elite replicating events in Europe.

The Mexican Revolution (1910-1917) brought many new political and social ideas and one of the most important achievements of this movement was to have created a notion of common identity and national heritage and to acknowledge the pre-Hispanic past and the rural traditions as authentic national values (Florescano, 1997). Shortly after the revolution new institutions for the safekeeping of the national heritage were founded. At least rhetorically, these institutions were founded with the idea that the indigenous populations played an important part in the history of the nation, that it was necessary to study these populations and also necessary to conserve and communicate their heritage to incorporate it to the national identity (Burke, 2006).

An outcome of the revolution was that indigenous people were starting to be regarded as important. Nevertheless, they were still being seen as a curiosity and 'specialists' decided what to conserve and how to display it. Indigenous people were not involved in the way they were being portrayed. Moreover, as I mentioned earlier in this chapter, still today indigenous groups are still relegated and marginalized in the country.

After the revolution, the authorities continued to insist on imposing a unique notion of cultural heritage, which put Mexico's patrimony in a rather difficult position, given its pluralistic and diverse conformation (Bonfil Batalla, 2008).

5.5. Science communication in Mexico

Communication is a social activity, and as such it has a variety of manifestations in relation to the time and place it is taking place. According to Argentinean communicator, Roxana Giamello, all communication activities bear the marks of its time and socioeconomic context, they are:

"... not outside the dialectic of power or the singularities of socio economic junctures, therefore communication must be analyzed from an historical and social perspective" (Giamello, 2011: 34).

Furthermore, public understanding of science scholar Bruce Lewenstein affirms that one of the important aims of engaging the general public with science and technology is the adaptation of scientific knowledge to particular circumstances, therefore, the communication process and the understanding of science are determined by their context (Lewenstein, 2003)

In agreement to those perception of public engagement with science, for a better understanding of the context of the case studies presented in this research I considered important to investigate the state of science communication in Mexico, with the finally aim of situating my case studies in respect to other initiatives of science communication in the country.

In this section I will begin by presenting a brief historical overview of science communication in Latin America. Secondly, I will focus on the state of science communication in Mexico.

The popularisation of science in Latin America

The term that is used predominantly in Latin America to denote science communication activities, i.e. TV, documentaries, radio shows, exhibitions in museums and science centres, informal education events, science journalism and public engagement activities is *science popularisation* (*divulgación científica* in Spanish).

The use of this term was probably adopted from the French *vulgarisation scientifique*, a term that has been linked to a culturally dominant view of science communication, where “*experts and lay audiences are divided by a vast gulf*” (Myers, 2003: 267) and according to which in the course of translation of the scientific information from one discourse to the other this information is simplified and distorted (Hilgartner, 1990). I believe that the title that this activity bears in Latin America carries a connotation to how this profession is performed and regarded at. I will, therefore, use the term “science popularisation” instead of “science communication” in the whole of this section.

As I was researching the panorama of science popularisation in Latin America I came across many definitions of the subject, all of them denoted a one-way process between the public and the communicators, which is a strong indication that the model used to communicate science to the public does not embrace public participation. As an example Carmen Sanchez-Mora, a prominent Mexican science populariser, defines it as

“a multidisciplinary activity aimed at communicating scientific knowledge through the use of diverse media to different volunteer audiences, recreating and contextualizing that knowledge to make it accessible to the general public” (Sanchez-Mora, 2007 :103).

This definition of science popularisation has a clear association with the deficit and PUS models, where the audience only receives information and has no active participation in the communication process. The word dialogue does not feature in this definition, nor the possibility of the audience to engage in a two-way communication.

In Latin America and the Caribbean, considered by the UNESCO as one of the most inequitable regions of the world where more science development is clearly necessary, the attention given to science is reduced and centered only in small groups within the population (UNESCO, 2000). UNESCO's Science Report of 2010 states that the establishment of Science and Technology Policies could constitute an important factor in reducing inequality. However, there is a lack of public investment in Science and Technology and national innovation systems in the Latin American region remain weak (UNESCO, 2010). Furthermore, Giamello believes, that the repeated political, social and environmental crises in Latin America have put the consolidation of centres and programs of science popularisation at risk (Giamello, 2011).

In terms of scientific culture, Latin American societies suffer often some vicious circles that seem to have no solution. Science has little attention in the mass media due to a lack of scientific culture in the country, however, in the face of serious gaps in national education the creation of scientific culture lies heavily on other outlets, and given to their broad reach, mass media are some of the strongest candidates (Calvo Hernando, 2002). Since mass media outlets are not contributing to the creation of a scientific culture in the population, it is then necessary to create new ways in which scientists communicate to the general public. It is in this sense, that community museums that present science related subjects can have an impact in the involvement of the general public with scientific issues.

Moreover, the cultural diversity of Latin America and the specific social and economical problems it presents raises the necessity to develop a great diversity of activities in this field. It is necessary to employ different media and strategies to

reach a very diverse public. It is also necessary to recognize that social groups have different communication abilities that require the set up of new discourses contextualized for different publics. Communication strategies cannot be the same in urban and rural areas, especially given the contrasting realities in the inhabitants and the high rate of inequality found in Latin American societies. Science communication should have the aim of incorporate the different social sectors to the appropriation of knowledge, which will allow them to participate in the construction of new knowledge to see, interpret and transform their reality (Giamello, 2011).

Contrary to the development of this discipline in Europe, where professional science popularisers can be identified from the 19th Century, (Gregory and Miller, 1998) in many countries of Latin America the professionalization of popularisers is very recent. Only in recent decades more emphasis has been put into the professional training of these actors and they have become increasingly diversified and specialized in communication strategies (Massarini and De Castro, 2004). Therefore, science popularisation is considered a fairly young activity that is in gestation and development in the Latin American region (Zamarron, 1994).

As Massarini and De Castro (2004) state, the popularisation of science had a tentative beginning in several countries of Latin America in the 18th century, when local intellectuals became convinced that science would raise the economic level of their countries. Periodicals and journals were created as a vehicle for the dissemination and discussion of science. In Latin America it was the scientists who committed themselves to the popularisation movement from the 19th century. Through their popularisation activities, they attempted to increase social presence with different aims: reaffirming professional legitimacy, increasing communication with their colleagues as well as with other social groups (Zamarron, 1994). Furthermore, many of the scientists acting as popularisers had studied in European countries and tried to reproduce external models (Massarini and De Castro, 2004).

The most important international actor in science popularization in the region of Latin America and the Caribbean is Red-POP⁴³. Red-POP is an international network that brings together centers and programs for the popularization of science and technology in Latin American and the Caribbean, with the general objective of strengthening active cooperation and exchange among them. The Red-POP was established in 1990, in Rio de Janeiro, inspired by the UNESCO's Science, Technology and Society Program. Currently the Red-POP has over 80 members from more than 15 countries in Latin American and the Caribbean and has relationships with science and technology popularization centers in many countries throughout the world. The activities of the Red-POP are discussed, approved and established at the General Assembly held every two years.⁴⁴

In current times, the challenges in the Latin American region in terms of science popularisation are, mainly, the strengthening in science communication research, the adequate implementation of science and technology strategies in terms of the democratization and the strengthening of science and technology policies that favour science communication (Tagüeña, 2008). The popularisation of science is an activity in a permanent process of construction and transformation. Assessing its current meaning, discussing its aims and practices, striving to make it more effective and integrated in the social reality of each country and region, exploring new media, themes and focuses are only some of the challenges that face professional science popularisers in Latin America. Expanding it to include large marginalized sectors of the population is another task which only will be possible if we have consistent general orientations (Massarini and De Castro, 2004).

⁴³ The acronym is made from the word "Red" (Network in Spanish) and Pop from Popularisation. In all my references to Latin American and Mexican institutions I translated the names to English, for a better understanding, but I have left the acronyms in Spanish, as I believe this will facilitate the search for more in depth information if desired.

⁴⁴ For full information on Red-POP: http://www.redpop.org/pagina_ingles/homei.html

The Case of Mexico

For a country like Mexico, where illiteracy levels are high and where there a big percentage of young adults are not undertaking higher education⁴⁵ the necessity of developing extracurricular activities to communicate scientific knowledge is urgent, since they offer the possibility of improving formal education and scientific culture in society and also of developing a suitable environment to form new scientists (Zamarrón, 1994). Furthermore, the activities to communicate scientific knowledge have to use diverse media that are adapted to reach a population that is highly diverse, living in unequal circumstances and is spread in a vast territory.

Science in Mexico is still very distant to the society, therefore scientists enjoy a powerful position in front of general public, which leads to a dominant view in terms of science popularisation activities. Most of scientists in Mexico conform an elite that does not recognize the necessity to communicate its discoveries to the general public.

It is calculated that there is just one scientist for every 8 000 inhabitants in Mexico (Beyer-Ruiz and Hernandez, 2009). More over, it has been recently reported in the UNESCO Communication on Science 2010 that Mexico is well behind in training scientists compared to nations with similar development rates⁴⁶. According to many academic institutions and eminent scientist this is due to the lack of interest that the government has in the production of scientific knowledge, dedicating between 0.3 and 0.4% of the GDP to it (Olivares Alonso, 2011). The gap between scientific community and general public is not only reflected in the reduced quantity of professional scientists, but also in the ignorance and the lack of concern for national science (Beyer-Ruiz and Hernandez, 2009).

⁴⁵ According to the National Institute of Statistics and Geography (INEGI) by 2005 there were 88, 120,543 people over the age of six years old of which only 35, 497,954 have primary education and only 8,341,662 have higher education. Data from the census are available online at: <http://www.inegi.org.mx/sistemas/mexicocifras/MexicoCifras.aspx?e=0&m=0&sec=M&ind=1005.000027&ent=0&enn=Estados%20Unidos%20Mexicanos&ani=2005> (Accessed 3rd February 2013)

⁴⁶ The full report can be found online at <http://unesdoc.unesco.org/images/0018/001898/189883e.pdf> (Accessed 3rd February 2013)

To improve the public engagement with science in Mexico multiple efforts on many fronts are necessary: education, mass media to inform the general public of the science that is being done in the country, the promotion of scientific vocation in young adults and children and the opening of communication spaces that touch scientific themes in an accessible language (Beyer-Ruiz and Hernandez, 2009). Science popularisation, in this context, should be recognized as a profession able to reach a wide audience, being capable of raising awareness of the social, cultural and economic importance of science for the entire population, generally unaware of the impact it has in their lives (Tonda, *et al.*, 2002).

In Mexico, two kinds of organizations are devoted to the communication of science to the general public: civil associations and academic institutions (Beyer-Ruiz and Hernandez, 2009). Below, I make a brief account of the most important institutions in this country.

The Mexican Academy of the Sciences (AMC) is a civil association founded in 1959. It has currently 2156 members, all of them academics from many science disciplines. The Academy runs many science communication programs, mostly set in a very academic environment and within the deficit model. As an example of its programs I would like to quote two of them. First is “Sundays in Science”, a program where scientists hold conferences in several contemporary science issues aimed at the general public. The conferences are set in the National University’s Science Museum. The second one is “Science in your school”, a program that updates primary school professors in science issues. From its beginnings in 2002 to now it has benefited 5 000 teachers. (Beyer-Ruiz and Hernandez, 2009). The Academy is quoted in many books and papers as one of the most important science communication institutions in the country and it is undeniable that they are doing important work, however I found it surprising that there is no mention of science popularisation in their objectives as a society⁴⁷.

⁴⁷ For full information on the Mexican Academy of Sciences and its programs: <http://www.amc.unam.mx/>

The Mexican Society for the Popularisation of Science and Technology (SOMEDICyT) is a civil association encompassing science popularisers, scientists, technicians, journalists, teachers, communicators from many places in the country. Among its objectives are to communicate science to all sectors of the population through different media with the aim of integrating science into national culture and to promote science popularisation as a fundamental academic and professional activity.⁴⁸

Although science popularisation has still no recognition as an academic activity equally important as other subjects, one of the most important efforts for the establishment of science popularisation as a profession has been made from academic spheres. Especially important is the National University's General Office of Science Popularisation (DGDC). Created in 2007 with the objective of making more efficient the popularisation of scientific knowledge, the DGDC is now the most influential science communication institution in the country. This institution manages the Science Museum *Universum*⁴⁹, and *The Museum of Light*, both in Mexico City; it broadcasts radio and TV programs, has published a collection of books on science communication and publishes the monthly science magazine *¿Cómo ves?* aimed at children, teenagers and young adults. Furthermore, it has hosted a Science Popularisation Course for the past 12 years and has recently created a graduate programme in Science Communication, with an orientation towards Philosophy of Science. It manages a budget of approximately 10 million US Dollar per year (Gil Mendieta, 2007; Tagüeña and Cruz Mena, 2008). The DGDC claims that one in every four Mexicans has had contact with science communication activities due to their programs and products (Tagüeña and Cruz Mena, 2008).

According to Mexican science popularisers Julia Tagüeña and Javier Cruz Mena, it is imperative that science communication is regarded as an important activity with

⁴⁸ For full information on the Mexican Society for the Popularisation of Science and Technology: <http://www.somedicyt.org.mx/>

⁴⁹ The science museum *Universum* was the first science museum in the country and is one of the biggest in Latin America, with more than 8 million visitors from its opening in 1992 to 2008 (Tagüeña and Cruz Mena, 2008).

academic recognition and formation programs since for them, the most important event in modern society is the valuation of knowledge, particularly scientific knowledge, which is both the consequence and the motor of modern development and wellbeing (Tagüeña and Cruz Mena, 2008).

Given the extense of the territory and the diversity of the population that I have mentioned before, it is also of grand importance that science popularisation activities manage to reach a broader audience in order to engage a bigger percentage of the population with scientific issues since public engagement with science and technology constitute a fundamental part for the development of a country. In the next section I will present my findings in the interviews I carried out with Mexican professional science popularisers regarding the state of this profession in Mexico and the position of the community museums that constitute the case studies in this research.

5.6. Eco or Community museums in Mexico

“Rethinking the role of museums as social institutions will require no less than a reinvented museum—a mindful organization that incorporates the best of enduring museum values and business methodology, with a sense of social responsibility heretofore unrecognized.” (Janes, 2010: p.326)

According to Simpson (1996), the culture of change has progressed most positively in countries where colonial domination has resulted in the disempowerment of indigenous groups in their own lands.

The historical background of museums in Mexico confirms that statement, given that Mexico has been among the countries that have successfully adopted practices to sustain and represent indigenous minorities (Camarena and Morales 1997, 2005).

The birth of community museums in Mexico is a result of the ideas that the New Museology movement brought to the professionals of museology and of the worldwide movement for the recognition of indigenous' and/or marginalized people's voices and interests.

As I argued in a preceding chapter, the new museology movement emphasized the necessity of the museum to engage with the community in order to become a participant in the shaping of the cultural, social and economical development of a certain area. This new role for museums became apparent when the 10th General Conference of the International Council of Museums (ICOM) celebrated in Grenoble, France, in 1971 had the theme of "The Museum in the Service of Man, Today and Tomorrow", with particular emphasis on education and cultural action.

The following year, participants at the ICOM-UNESCO roundtable conference in Santiago, Chile, claimed, officially for the first time, that a museum should be integrated with the society around it (Fuller, 1992). The conference had as a subject the social role of the museums in Latin America. Rivard (1984, quoted in Davis 1999) is of the opinion that of the countries present in the Santiago Conference only Mexico made consistent efforts to conform to the principles of the declaration immediately following the meeting.

The Santiago meeting, according to Davis, "*can be identified as one of the turning points in museological thought and the place where community museology, a museology that recognized the need to aid development in disadvantaged communities was born*" (Davis, 2008:399).

Among the resolutions of the conference was the pursuit of an integral view of the museum that would promote the development of societies that shelter and uphold the museums and there was a special recommendation to install and promote museum activities in poor and segregated urban settings (ILAM, 2006; Burke, 2006). The creation of local folk and community museums that would enable people of the poorest *barrios* (neighbourhoods) to have access to their cultural heritage was seen as priority for action (Davis, 1999).

There were two initiatives or experiments in Mexico as a result of the resolutions of the ICOM Conference in 1972 (Hauenschield, 1988) that eventually lead to the creation of the Community Museums National Program by INAH (National Institute of Anthropology and History) (Davis, 2008).

The first initiative became possible in 1973, when the Museum of Anthropology in Mexico City closed for extensive renovation and the staff took this opportunity to experiment and develop a museum format appropriate for the city's poorest residents (Fuller, 1992). The project "Casa del Museo" (House of the Museum) was created with the idea of bringing the museum to a public that, according to museum evaluations and due to social and economic factors, was not transferred to the National Museum of Anthropology. Two museums were set in two marginal areas. The projects lasted only a brief period and closed due to lack of resources, personnel and other political conflicts (Burke, 2006)

The second initiative was launched the same year under the name "Museos Escolares" (School Museums). The mission of this project was to put a museum in every school of the country. The program reached its peak in 1975, at which time more than 400 school museums were established throughout the country. Despite the success of the program the INAH decided to end it in 1976 (Burke, 2006).

After the failure of these two experiments, the INAH attempted to continue with their social integration and museum education and created a department for public oriented programs (Burke, 2006).

Heritage preservation is one of the central tenets of museums, however, indigenous people frequently refer to the limitations of museum display as a means of expressing and preserving culture, arguing that culture is an evolving process (Simpson, 2009). The western museums' emphasis on objects does not accommodate the need for preserving living cultures (Simpson, 1997). Therefore, museums are adopting new roles and forms, which reflect alternative approaches to heritage preservation and interpretation in local contexts.

As a response to the need of public participation and interaction with people with different cultural and social circumstances⁵⁰ the Community Museums Program in Mexico was created in 1983 (Davis, 2008). This new experiment would try to combine the teachings and experience of the former initiatives of “Casa del Museo” and “Museos Escolares” in order to take advantage of the already existing networks of people and collaborations (Hauenschild, 1988). Community museums are public spaces maintained by the communities to exhibit their own culture and preserve their cultural and natural heritage. In Mexico, it started primarily as a mean to preserve the archaeological patrimony in the communities’ territories (Komatsu, 2003).

This program states that a community museum should encourage participation of the community, that its themes should be tied to the interests and needs of the community, that it promotes the recognition of the creative and decision-making capacity of the community to resolve its needs and to recover the past common history in order to understand the current reality. (Hauenschild, 1988)

Hugues de Varine (1995), who coined the term “ecomuseum” for the first time, considered that for a museum to play its role of the social and political expression of a given community three factors have to be present. Firstly the community, as a whole, has to recognize itself in the museum. Secondly, the community has to use the museum as a tool for its development. Thirdly, the community has to control and manage the museum permanently (De Varine, 1995 quoted in Alonso-Fernandez, 1999).

An ecomuseum or community museum is defined by the audience it reaches or the geographical area it occupies and is not confined in a single building. Collections are organized around the community’s relationship with its culture and natural environment (Fuller, 1992). In practical terms, the importance of the preservation of the context and associated activities and not only the object itself, allows

⁵⁰ These differences in cultural circumstances are a direct consequence of the diversity of indigenous groups in the country, as well as the disparity and inequality within the Mexican population.

intangible heritage to provide meaning to the object itself by returning to its place of origin (Simpson, 2009).

Alonso-Fernandez (1999) explains in five points the differences between the traditional museum and the community museum. The first concerns with the physical space: the traditional museum exists within the walls of a building whereas the community museum collection exists within a territory. Secondly, he mentions that while traditional museums deal with collections of objects, community museums deal with both cultural and natural patrimonies, which include all the available resources in the community. The third aspect that Alonso-Fernandez compares is the fact that traditional museums are managed and developed by professionals with the idea of following a practical and a scientific discipline, on the other hand community museums are not necessarily administered by professionals only and the community members follow an interdisciplinary approach with the idea of global development. The fourth point in the comparison concerns the identification of the audience of the museum in question. In traditional setting the audience is the general public while in community museum it is not only the general public but also the people of the community. Finally, Alonso-Fernández (1999) argues traditional museums seek knowledge, education and entertainment and community museums seek also to encourage initiatives taking skills from the community.

According to a report presented in 2000, there were up to 269 community museums in Mexico, 74% of them were set in *mestizo* (mixed) communities and 24% were in indigenous communities belonging to 24 different ethnic groups (Burke, 2006; Davis, 2008).

Community museums are public spaces maintained by the communities to exhibit their own culture. They are based on the belief that museums and communities should be related to the whole of life. It is through communal management and the consensus generated, which in turn makes possible the decision of what to include and exclude from the galleries, that recognition of indigenous' people voices and interests is achieved.

Therefore, these community museums have a crucial role in the conservation of indigenous identity, not as a civilization of the past, but as a living culture that is being shaped daily.

As we have seen earlier in this chapter, Mexico is a deeply unequal and diverse society and most of the rural indigenous population live in poverty. Thus, it is not surprising that the philosophy of the new museology has a strong urge to provide aid for community development.

The emergence and success of community museums in Mexico can act as a resistance strategy against the discrimination and marginalization of the indigenous people. Through the inclusion of indigenous and rural communities in the decision making of tangible and intangible heritage preservation and exhibition these institutions have the potential of being weapons of empowerment and social and economic wellbeing.

According to Alsop (2006) the process of community empowerment enables people to gain and retain control over their lives, resources and patrimony, but demands more than the inclusion; it requires a real participation, a true ownership and decision making with aims towards social and political change.

Furthermore, Simpson (2009: p.124) argues that inclusive museological practices that enable conservation of the patrimony and the renewal of cultural identity are vital in allowing cultural identity and pride and *“indigenous approaches to communicating, teaching, governing and healing”*.

It is precisely this notion of the role of eco or community museums as active participants in social change, more precisely in the conservation of natural and cultural, tangible and intangible heritage that that I want to test with theoretical and practical research during the course of this investigation.

Chapter VI

The Community Museum of San Juan Raya

In this chapter I will analyze the interviews in regards to the community museum of San Juan Raya. I will divide the chapter into two parts according to the analytical themes that arose from the coding of the interview transcripts.

Part I opens by focusing on elements of the interviews that concern the social problematics of the area and on the interaction of government officials with indigenous and local populations. The commentary and the interview excerpts, then turns to the biodiversity of the area, the economic activities that potentially threaten the biodiversity of the region and the museum as an economic alternative. Finally I will address the subject of the conservation efforts that have been carried out in the community.

Part II draws on the interview material to give insight on the events that lead to the creation of the museum and the appropriation of the project by the community. This section also examines the communication processes between local people, visiting scientific experts and the museum. Afterwards I will address further indicators of the museum as a tool for social change, in terms of how it is driving revalorization of the heritage, generating changes in gender related attitudes and becoming a catalyst for other sustainable development initiatives in San Juan Raya and neighbouring villages.

Interviewees

I interviewed nine people in relation to the museum of San Juan Raya (see Table 4, page 59). Five of those interviews were with people from the community. Alvaro Reyes, Juventino Reyes and Primitivo Reyes are farmers and community members involved in the creation of the museum from the inception. Minerva Hernández is the receptionist and explainer of the museum. Juan Reyes Barragán is a guide of the walking tours and was involved in the development of these tours from the beginning.

The other four interviews were carried out with people from outside the community, but who have been working there for a long time. Dr. Alfonso Valiente, Carlos Silva and Luguí Sortibrán are researchers from the National University who have been conducting biological research in the area, and were involved in the creation and development of the museum. Suguey Martínez is the schoolteacher of at the village primary school. She has never been involved in the project of the museum. (for a reference on the description of the roles of each interviewee see Table 4, page 59)

Table 9. Full list of Interviewees and reference acronyms.

Community members	External collaborators
- Alvaro Reyes (AR)	- Alfonso Valiente (AV)
- Juventino Reyes (JR)	- Carlos Silva (CS)
- Primitivo Reyes (PR)	- Luguí Sortibrán (LS)
- Minerva Hernández (MH)	- Suguey Martínez (SM)
- Juan Reyes Barragán (JRB)	

Part 1.

6.1. The Valley of Tehuacán-Cuicatlán

6.1.1. The history of the area and its current social problems

The community of San Juan Raya is located in the Tehuacán-Cuicatlán Biosphere Reserve, which encompasses the Valley of the same name and the numerous mountain ranges that surround it.

This area is shared between the south-western states of Puebla and Oaxaca and covers a diversity of ecosystems, among which are the tropical deciduous forest, oak forest, grassland and desert scrub (SEMARNAT, CONANP, 2013).

The valley of Tehuacán-Cuicatlán, thanks to its complex topography and geography, possesses a great diversity in habitats, which a correspondingly great biological and ecosystems diversity (UNESCO, 2012) More than 3,000 different species of plants and vertebrates can be found in this area, making it a biodiversity centre of worldwide significance. (SEMARNAT, CONANP, 2013). In recognition of its importance, the Mexican government decided to protect it and established the Biosphere Reserve of the Valley of Tehuacán-Cuicatlán on the 18th of September 1998. The Reserve has an area of 490,187 hectares.

The Biosphere Reserve of the Valley of Tehuacán-Cuicatlán possesses around 200 archaeological sites, the remnants of ancient cultures and prehispanic settlements. 119 of these are in the municipality of Zapotitlán, where San Juan Raya is found (INAH, 1999). This area is regarded as a key site for understanding the origin and development of agriculture in Mesoamerica, and remnants of the exploitation of natural resources in the valley date from the time the first humans arrived in the area. The oldest remains of plant domestication date from 9,600 and 7,000 B.C. and have provided key information about the domestication of various species

important in the diet of Mesoamerican cultures: corn (*Zea mays*); chilli peppers (*Capsicum annuum*); avocado (*Persea americana*); pumpkin (*Cucurbita sp.*) and beans (*Phaseolus sp.*), amongst others. (UNESCO, 2012)

Today the Valley of Tehuacán-Cuicatlán is home to eight different ethnic groups: Nahuas, Popolocas, Mazatecos, Chinantecos, Cuicatecos, Chocholtecos, Ixcatecos and Mixtecos who inhabit along rural populations of mixed indigenous and non-indigenous origin (SEMARNAT, CONANP, 2013). Approximately 35,724 people live in the Reserve in 278 settlements. Most of these settlements are very small, with populations of less than 220 inhabitants. 78 % of the people of the Reserve are indigenous, and belong to one of the eight ethnic groups mentioned above (INEGI, 2005).

During the war of Independence (1810-1821), and then in the Revolution (1910-1917), the area where the Reserve is now located suffered heavily from economic and food crises. With agriculture being the main activity of the inhabitants of the valley, armed conflict brought a lack of investment, the destruction of roads and consequent difficulty of transport of goods, and the abandonment of the fields due to a shortage of workers (SEMARNAT, CONANP, 2013).

The primary economic activities of the inhabitants of the valley remain cattle farming and agriculture. The arid zones of the Reserve remain among the poorest areas in the country. According to the poverty index made by the National Council for the Evaluation of Social Development Policies (Consejo Nacional de Evaluación de la Política de Desarrollo Social⁵¹), 72% of the population of the municipality of Zapotitlán, where the community of San Juan Raya is situated, live in poverty. Of these 72%, 18% live in extreme poverty. In the 51 municipalities that make up the Reserve, 21.2 % present very high index of marginalization⁵², 65.4 % presents high

⁵¹ The Council is a governmental organism whose objectives are to coordinate the evaluation of social development policies, programs and actions carried out by the government. It also establishes criteria to define, identify and measure poverty in the whole country.

<http://www.coneval.gob.mx/Paginas/principal.aspx> (Accessed on 8th May 2012)

⁵² The Mexican government defines marginalization as a multidimensional phenomenon originated by an economic model and expressed by an unequal distribution of resources and the exclusion of diverse social groups of the process and the benefits of development. As a consequence, marginalized

marginalization, 11.5% have a medium level and only 1.9 % of the population have a low level of marginalization.⁵³

Only 5,689 people in the Reserve have access to public health services, making the rest of the population wholly reliant on traditional medicine. The lack of sanitation leads the pollution of water sources and has an important impact on public health. There are problems of drinking water scarcity, which are especially acute in those regions of the Reserve that are isolated and difficult to access (ECOPRODES, 2001).

There are no morbidity or mortality official statistics for inhabitants of the Reserve. However, according to field research undertaken by personnel from the different municipalities of the area, the majority of illnesses in the population are related to a lack of access to basic services, like drinking water and sanitation, as well as to nutritional deficiencies and a lack of medical services (ECOPRODES, 2001).

communities present a high level of social vulnerability. Several indicators that signal the level of marginalization of a population are: lack of education, housing and access to health and social services, as well as lack of employment opportunities or a very low salary. A report on the definition and state of marginalization of the Mexican population (in Spanish) can be found online at: <http://www.conapo.gob.mx/work/models/CONAPO/Resource/1755/1/images/01Capitulo.pdf> (Accessed, 3rd December 2014)

⁵³ The results of this census, carried out in 2010 are published at <http://web.coneval.gob.mx/Paginas/principal.aspx>. (Accessed on 8th May 2012)



Fig 7. Map of Mexico showing the position of the community of San Juan Raya in the state of Puebla.

The village of San Juan Raya is a very small human settlement (around 200-240 people) in the municipality of Zapotitlán, about two hours from the city of Tehuacán. In the area of San Juan Raya, there are important deposits of fossils dominated by marine specimens, mainly of the lower and middle Cretaceous⁵⁴ Period (SEMARNAT, CONANP, 2013).

The scientific ‘value’ of the territory was a persistent theme in my interviews:

This land is not only a Cretaceous fossil deposit; when Mexico was divided in two by sea the beaches were precisely in this area of Puebla. This was a reef, so this area has the best or one of the best fossil deposit of marine animals of 100 million years ago. (AV, 32-35)

⁵⁴ The Cretaceous is a geological period that extended from 145 ± 4 to 66 million years ago. Among its most relevant characteristics are the extinction of dinosaurs and the emergence of plants with flowers in evolution. For full information refer to the website of the Museum of Paleontology, University of California: <http://www.ucmp.berkeley.edu/mesozoic/cretaceous/cretaceous.php> (Accessed, 3rd February 2015).

The area, then, combines natural 'wealth' with economic austerity: despite their living in a region rich in fossil resources, the people of San Juan Raya live in extreme poverty.

A highway runs through the Reserve, but connects to the village by a 60km unsurfaced road. The state of this minor road running to the village is very bad, especially in the rain, and after leaving the highway it takes about two hours to reach San Juan Raya. This dirt road, on reaching the village, becomes the community's main thoroughfare. Here you find the church, the school and the offices of the president of the community⁵⁵. Several smaller roads debouch onto the main road; along these tracks are the houses where the people of San Juan Raya live. These houses are all one story high and are modest; all have a small garden where people keep their animals and grow their vegetables⁵⁶. Electricity arrived only in the last ten years. There is no running water, no gas supply, and no phone mobile or landline reception. There exists a primary school in the community, but students attending secondary and high school must travel to the nearest town.

The level of poverty and lack of economic opportunities is recognized by Sugey Martínez, the teacher of San Juan Raya's primary school:

This is a community marginalized by lack of resources, by the way this community is registered in INEGI as a marginal community with lack of resources. (SM, 103-104)

⁵⁵ Figure 1 (p.22) and Figure 8 (p.133)

⁵⁶ Photographs 8A and 8C (p. 133)



Fig 8. (A) The main road of the community of San Juan Raya, (B) This same road leads to the highway. The nearest town, Zapotitlán, is one hour away. (C) A typical example of the architecture of a house in San Juan Raya (D) A man shepherds his goats through the community. All families in San Juan Raya rely on animal farming for their survival; however, as they inhabit a natural Reserve the number of animals they can possess is limited.

Carlos Silva, a biologist working in Dr. Alfonso Valiente's laboratory has been going to the area for many years. This is how he remembers his first visit to San Juan Raya:

So around 1986 it was the first time I visited San Juan Raya. You could hardly call it a village then. There were a few shacks made of wood, and the people were poor, very, very poor. They were even exchanging fossils for food, you gave them an orange and they gave you a fossil. Food, they were not exchanging for money, they wanted fruit or whatever you had with you. The situation was extremely bad. (CS, 126-131)

6.1.2. Government interactions with communities and public policies

In the particular case of San Juan Raya the establishment of the Reserve put restrictions on the exploitation of the fossils that the community had been carrying out in the past. This restriction on fossil exchange was the catalyst for the beginning of the museum. Given the significant amount of fossils that the community had in its lands and the high level of poverty, fossil trade was one of their forms of subsistence. People were quite used to exchanging fossils for money, food or clothes. In their own words,

At least in the respect of fossils I remember that we used to gather the best fossils we could find and we exchanged them for almost nothing with the tourists. Sometimes they gave us some fruits or some coins. (AR, 264-266)

Many people came with clothes, food, fruit and, well, they told us, if you give us the fossils we can give you this, fruit or clothes, and, well, many people were interested in gathering fossils and exchanged them, two or three pieces for a piece of clothing or food. This went on for many years, people exchanging fossils for food or fruit or clothes. (PR, 17-21)

Both quotes give a striking account of the subsistence economics and poverty in the community. But when the valley was declared a Natural Biosphere Reserve in 1998, the authorities moved to protect the plants, animals and fossils of the area. Wildlife and fossil trade, which had been one of the economic activities of the inhabitants of San Juan Raya, suddenly became illegal.

This affected the community's economic activities. Juan Reyes Barragán, a community member and the founder of the guided tours initiative, remembers the impact new regulations had in their everyday activities.

We had this whole story of selling, exchanging and giving away fossils, partly because of the necessities that people had, partly because of ignorance of

what fossils were; to many they were just rocks with nice drawings on them. So we sold them to visitors and, well, afterwards we knew about the laws that prohibited it. (JRB, 205-208)

Lack of communication with administrative personnel of the reserve meant that the community was not only faced with economic restrictions but that they found themselves breaking laws they did not even know existed.

Before, we didn't know anything about the laws. We didn't even have electricity so we couldn't find out. In 1990 two people from the area were arrested and this was a situation that changed the life of people here, especially the people that were relying a bit on these exchanges and were doing it every day. (JRB, 209- 212)

This is confirmed by Primitivo Reyes, a community member and founder of the museum:

But well, as I told you the history was like that, it started with the problems we had before, before. The people didn't know, we didn't know that it was a federal crime to exchange or sell fossils. Even people from wherever knows where and took the majority of fossils, the best ones, they came in big trucks filled with stuff to exchange for the fossils. (PR, 82-86)

On one occasion federal police officers came to the town. They caught some people they thought were exchanging fossils and put them in jail. These detentions alarmed the residents of San Juan Raya and they stopped the fossil exchange. The onset of change was caused by the rise of legal problems relating to the bartering of fossils.

What made us look for the way to do the museum was the problems we had before. In the past we... we were free, we didn't know about the fossils, that they had a value and that they were... how do you say it... national goods. So people sold them, sold them, well they were not really selling them, more like

exchanging them for clothes, food, for whatever...we used to exchange them.
(PR, 11- 15)

As I discussed in chapter four (page 94) the establishment of a natural reserve often brings difficulties between government officials and community members (Orlove, 1991; Orlove 1992; Orlove & Brush, 1996; Conklin & Graham, 1995). In the case of the people of San Juan Raya the confrontation arose from a lack of communication of Reserve regulations and an absence of involvement in local communities in the decision-making process concerning the regulations of the Reserve. Local populations were never consulted on the creation of the Reserve and they were never informed of the legal restrictions to their economic activities.

I think people have already talked to you about it, in the past some pieces were sold, exchanged for food, clothes, some coins. The fossils, we exchanged them and then the federal police arrive and arrest one person from here and another one from Santa Ana. They charge them with trafficking of fossils and archaeological pieces. Now we know that it is a federal crime - they took them to the city of Puebla and locked them up. Then they told us that exchange or sale of fossils was strictly forbidden. (AR, 37-43)

This lack of inclusion shows that even if these communities are the legal owners of the lands they inhabit, governments do not allow them to participate in decisions that will affect their management.

Until one day, well we didn't know that we were not supposed to do that, to sell or exchange, and so one day the police came, I don't know who sent them, to see if we were selling or exchanging. And well yes we were and so they caught a man, Don Cornelio, they caught him, the poor man was not even one of the ones that were selling or exchanging. (PR, 26-30)

Conservation practices have been, throughout time, adjusting to emerging problems, concerns and changing knowledge. It was not until the Earth Summit held in Rio de Janeiro, Brazil in 1992 that the centralized control over conservation

projects and natural resources began to give room for local and regional autonomy (Western & Wright, 1994). This was triggered by many factors; among those, Western and Wright recognize the emergence of grass roots development programs for the aid of emerging economies, the human rights and indigenous peoples movements, and the emergence of the concern of conservation in rural lands (Western & Wright, 1994). Community-based conservation moved away from the 'preservationists', who wanted to keep pristine habitats free of any human activity, and instead acknowledged the fact that there is a way to combine conservation and development.

However, in many cases communities living inside a natural park do not have a say in its conservation programs, and this is the case for San Juan Raya. The international parks monitoring organization Parkswatch has found that the administration of the Reserve of Tehuacán-Cuicatlán has not been active enough in producing or disseminating information about the protected area. This has led to a general lack of communication of the Reserve's rules and regulations to its inhabitants.⁵⁷

The laws regarding the protected status of Reserves are published in the official newsletter of the country (Diario Oficial de la Federación), which is available in print in government offices. However, this information never reached the community and as there is no newspaper and no TV signal, the people of San Juan Raya are not used to watching or reading news. Government officials and the personnel of the newly created Reserve made no effort of communicating new guidelines to the inhabitants of the Reserve. As a consequence, there was a general lack of awareness that selling or exchanging fossils was an illegal activity. Many people therefore fell foul of the law:

⁵⁷ Parkswatch is an international monitoring organization that conducts on-the-ground evaluations of Latin-American national parks and other protected areas. Parkswatch was created in 1999 by Dr. John Terborgh, Professor of Environmental Science, and Dr. Carel van Schaik Carel, Professor of Biological Anthropology and Anatomy at Duke University's Center for Tropical Conservation. Parkswatch has projects in Mexico, Guatemala, Venezuela, Peru, Brazil, Bolivia and Argentina. For a full report on the problematic of the Biosphere Reserve of Tehuacán-Cuicatlán refer to http://www.parkswatch.org/parkprofiles/pdf/tcbr_eng.pdf (Accessed 10th July, 2014)

And in the year 1990 or 1991 I think there were many arrests by the federal police. They arrested people on the grounds that they were plundering national goods. But people here did not know that, we did not have electricity, we did not watch TV, no one read a newspaper. So if the government decreed this activity as a federal crime we did not know about it. (JR, 18-22)

In the interviews there were many graphic descriptions of these difficult times:

And so this man was arriving into town when the police saw and caught him and charged him with the crime of exchanging and selling fossils. Poor man, he was not doing anything. He was just returning from his field or going to his house, I don't know. They grabbed him and brought him to Tehuacan's prison. Ah! (PR, 32-35)

In these accounts there is a strong sense of injustice:

And also they arrested another woman from Plan de Fierro, nearby. They took this man, then they went to Plan de Fierro and, well, they found this woman and she was just standing on the side of the road, and they took her in the van. They were not even selling the fossils, it was very sad (...) They were defenceless and not guilty; and they caught them. Police officers say they are good but no, no. Police eh? They do not do their duties. (PR, 32-43)

These statements also show that police and government officials are not trusted by community members. They are seen as corrupt, inefficient and unreliable. Experiencing this injustice, and knowing that in their condition of poverty and marginalization the authorities were not going to follow due process in the trials of the villagers, the community of San Juan Raya organised itself to protest against these unlawful detentions and after some time detained individuals were duly released.

We gathered signatures here and we signed a petition to ask for their release, but you see in the hands of Mexican justice (laughter). No well, with them if

you are not a lawyer, if you have no education or money you are not worth anything. And so well anyway they managed to get out, maybe because, as I told you, they were not guilty. The people that were selling fossils were kids and women and men, but others, not the ones that were caught. (PR, 96-101)

Following these confrontations with officials from the Reserve, and the police, all fossil exchange stopped. Furthermore, the people were so scared of being detained that the fossils they kept at home were destroyed or hidden.

After the arrest of these two persons, people got scared and went to throw away their fossils. I remember my parents sent me to throw away the fossils and to bury them afterwards. And well people didn't want to know anything about the visitors and hid from them. (JRB, 213-216)

After a few years, promoters of community-based programs came to the community to try to establish a way to exploit fossils in a legal way. This new condition forced them to get organized to find a sustainable alternative to exploit their resources.

So that stopped around 1991. Until 1996, that a person sent by the INI (National Indigenous Institute) or no, no it was someone from the INAH (National Institute of Anthropology and History). The INAH sent a lady from Community Museums, a promoter of the program, and she started to tell us that we should form a committee, that we can exhibit the pieces in a kind of museum and that that was no crime. (JR, 22-28)

The community members were aware of the value of the fossils for tourism and were interested in being able to use them as a way of living.

And, well that is what happened and we said ok if it is a felony to sell or exchange fossils for food or clothes then what are we going to do, how are we going to earn more if we cannot sell or exchange and we have so many of

them? Also we don't have many income sources, so fossils could be a way to earn a living. (PR, 54 – 58)

However, this process was not without conflict and scepticism from community members who felt officials of the Reserve were approaching them simply to impose regulations and projects in their lands.

So there was a bit of resistance from the community, resistance to accept what these people were coming to tell us: at the end we're the owners right? So people were saying: if we are the owners of these lands, why they are coming to tell us what to do with them? (JRB, 322-325)

Finally, consensus was achieved and a dialogue was established.

We talked with people from the INAH and told them we didn't want any problems, that we wanted professional advice to assess our options. (JR, 30-31)

Here, an important matter of Mexican governance gains relevance. San Juan Raya is a community-based ownership called “*comunidad*”. In Mexico, two forms of community-based ownership are currently recognized. The first of these involves “*ejidos*”, which allows groups of people to petition for access to resources they previously did not have access to. The second form of ownership is a “*comunidad*”, which is a form of social organization whose rights are recognized if its members can demonstrate prior, long-standing community-based use of the surrounding resources. This means that everything is communal. The land and all its resources are conferred to the community and are divided according to the number of households in the community. The main governing body is the General Assembly, in which all households are represented by one person. Everything is decided in the assembly and the majority of the people have to agree on something if it is to be done. All the administrative positions are appointed in the assembly and they rotate every year or two years. All community work is unpaid.

I think this is the best democratic system, communal and cooperative property systems. It is the best, everything is decided in an assembly and with open votes, people cannot hide their intentions, everything is very open. (AV, 65-67)

According to Dr. Valiente, it was through this mechanism – the assembly - that the establishment of the museum was decided upon. So, although the idea was not born from the community, once the idea was proposed it was soon discussed within the community's social organization.

Dr. Valiente is a researcher from the National University and has had a longstanding relation with the people from the community dating back more than 20 years. He has done extensive research in the area and has always worked with the permission of the people from the community. In our interview he told me he likes to be involved in the communities where he conducts research - and San Juan Raya seemed particularly in need of collaboration, given the conditions of poverty that prevailed. Once the decision to go forward with the construction of the museum was approved by the people of San Juan Raya he collaborated with community members to submit the proposal for funding to the authorities.

The people of San Juan Raya, with help from Dr Valiente and his team, submitted a proposal for funding to a governmental program that supports municipal and communitarian cultural initiatives (PACMYC). The first year they applied and seemed to have been accepted; however they never received the money. This lack of transparency or accountability of government's programmes contributes to the lack of confidence that we have seen in the community towards government officials.

We submitted it and the proposal was accepted but the money never arrived, we never knew why. So then next year we resubmitted the proposal, with a few changes, and we got funding. (AV, 74-76)

We don't have many resources. It's not like we present the project and people give us money. Not many institutions have been interested, so we have worked

in stages. When we started, well, we got organized in the community and we registered it at the INAH and Dr. Valiente got interested and he helped us to present the project to PACMYC to get some support of the project. So we got the support of PACMYC. (JRB, 113-118)

The first museum was located in the police station of the community. The people from the research group worked with museologists and community members to create a gallery where fossils were exhibited. The funding of PACMYC financed the materials and researchers and museum professionals worked for free.⁵⁸ The administration of the Reserve was not involved.

Yes, but we come up with the same issues, it was the initiative of one group of work, one lab, not the government, which at the end are the ones that supposed to do it. The initiative of people like Alfonso Valiente or us, that want to support them, is because they have asked us to. (CS, 235-238)

Dr Valiente highlights that the difference between their project and government initiatives is that the people of the community were truly interested in developing this project and was not something imposed on them.

It is different from those government programs that when they start giving resources they simply end and people are not interested, why? Because they are proposals from the top down that have no consensus in the community and people do not see their importance or are truly not important for them. (AV, 156-159)

After the museum was in the police station for a few years, the personnel of the Reserve and of the National Commission of Protected Natural Areas approached the community with a proposal to construct a bigger building for the museum. According to the researchers this new project of making an improved museum did not follow an inclusive methodology and was not well planned.

⁵⁸ A complete analysis of the creation of the museum is given in Part 2 of this chapter (Page 183).

They gave them funding to construct the new museum and they wanted to make it very big; I think they sent their architects to design the museum. I don't think they took the opinion of the community into account. Now they have a museum that is too big for the collection. There are two empty galleries. (LS, 159-162)

Outside researchers mentioned that the community was pressured into developing a museum that had no input from the community and that served only the interest of the authorities. The new museum, is considerably bigger than the old one, however, as the fossil collection was initially not planned for such a big space two of the four galleries of the new museum remain empty (Figure 10, p.168).

The authorities wanted it big so they could brag about their work helping the community. They also put lots of pressure on the community to open the museum at a time that was convenient for them; even though the museum was not finished, still it had had to open. (LS 163-166)

Talking about the role of the government as supporter of these kinds of projects, Carlos Silva, a researcher in Dr Valiente's research group, mentions that the real intention behind the support is to claim ownership of the project.

They always try to, well they have to report their activities every year and submit reports and so well they want to include every project and to claim it their own. So they started to give money and as if their project was their own from the beginning and they started to claim it was their project and not the idea of the people. (CS, 46-49)

The only purpose for them is to have some project more or less working with which they can justify their programs. (CS, 68-71)

Lugui Sotibrán, another member of the research group of Dr Valiente, confirms this idea.

I think that the government gets involved in these type of projects without a real compromise to improve the community, I think they do it because they want to show that they do something for the people, without really having the wellbeing of the community in mind. (LA, 151-155)

In this new project, community members were left to decide how to arrange the new galleries; they did not have support and were pressured to deliver the museum in time with the schedule of the authorities.

The problem here is that the people that gave them the funding put lots of pressure on them to open the museum as soon as possible, so the people of the community rushed things and did not have time to consult experts to develop the exhibition. That is why is full of mistakes. (CS, 100-104)

So they should have had more support in terms of museology advice (...) But the people from the Reserve didn't help them with that. (CS, 56-59)

They always had lots of pressure from the people working in the Reserve. They wanted to show off the new museum and they put lots of pressure for them to open, even when the museum was not finished. (LS 107-109)

However, overall, according to the people of the community the new museum is a good thing and collaboration with government officials has brought them benefits.

I think that in terms of, well how can I say it, we are with the government, I think they have also helped us. Yes, I think it has brought us many benefits. (PR, 234-235)

This marks a contradiction in which the actions of the government are regarded. On the one hand there is scepticism and even resentment among researchers about the heavy-handed way the museum has been built. On the other hand, community members seem to be glad that they have the new museum.

Furthermore, they confirm that personnel from the Reserve have come to their town to give them training in certain subjects related to ecotourism.

People from the administration of the Reserve and people from the tourist board of the Reserve as well came to give us training. (JRB, 50-52)

Without internet access or print media, the training and advice from people from outside is the only source of information that the people of the community have, which highlights the need of establishing a good dialogue between government officials, researchers and people of the community.

We don't have access to internet, we don't even have newspapers, so it's through people from the Reserve coming to tell us, or people from the university. Sometimes people from the team of Dr. Vali come to tell us if there is some funding opening and then we apply and see if we get it. (JRB, 195-198)

6.2. Conservation

6.2.1. Biodiversity of the valley of Tehuacán-Cuicatlán

The International Union for the Conservation of Nature (IUCN), considers the site of Tehuacán Cuicatlán Biosphere Reserve an important centre for global biodiversity (SEMARNAT, CONANP, 2013). It has this status because of the presence of endemic species, its species in special protection categories or in danger of extinction, and the presence of rare plants. The Reserve covers at least 9 different types of vegetation among which stand out the dry shrubland, bushes desert scrub, low tropical deciduous forest, forests of pine and oak, junipers and mountain cloud forest.

The valley is a priority area for the conservation of flora, given that it contains approximately 10% of the 30,000 species of plants described for Mexico (Toledo, 1985). Compared to other arid and semi arid ecosystems in the country, the Valley of Tehuacán-Cuicatlán has the greatest plant diversity, with two thousand six hundred and eighty six species, 365 of these which are endemic species (Méndez-Larios, I. *et al.*, 2004). This site is considered as a relict area of wild species and a diversity hotspot for the Cactaceae family. It is one of the zones with the highest concentration of columnar cacti in the world. (SEMARNAT, CONANP, 2013).

Some of the importance of the relationship of these groups and their environment was highlighted with the investigation into botanical species of the Reserve that were of human use which came up with a list of 808 different species (Casas *et al.*, 2001) of which almost 90 percent are endemic to this area (SEMARNAT, CONANP, 2013).

In terms of interaction between man and nature this area holds a very important significance in the history of domestication of maize and other Mesoamerican species, as we can see in the next statements.

This is the zone where the oldest records of maize have been found, the cradle of Mesoamerican civilization and in some way that makes this area attractive too. (AV, 92- 94)

This was the zone, in the valley of Tehuacán. The people living here used to cultivate and feed on maize. So the history of maize begins here because this is the oldest record that scientists have. Now, imagine, everyone in Mexico eats it every day! (JR, 245-247)

The valley also has significant animal diversity: there are 14 species of fish, 28 species of amphibians, 83 species of reptiles (of which 20 are endemic), 338 species of bird (5 endemic) and 131 species of mammals (11 endemic and 26 endangered). Among these species of vertebrates, some have an important degree of endemism or are under some category of protection, making them especially

important for conservation. Good examples are the macaw (*Ara militaris*), the otter (*Lontra longicaudis*) and the short tailed owl (*Micrathene withneyii*) (SEMARNAT, CONANP, 2013).

Furthermore, as mentioned before, the Reserve holds archaeological ruins and, around San Juan Raya, a very important fossil record

First of all this is the most important fossil deposit of the Cretaceous in Mexico. I'm certain of that. The palaeontologists tell you that they are still finding new things here, so after many years of studies they are still finding lots of stuff. That is the first thing. That this phenomenon is not easy repeatable. (AV, 351-354)



Fig 9. (A) The Tehuacán-Cuicatlán Natural Reserve presents a high rate of plant diversity and endemism, especially in Cactacea (Dávila, 2002). (B) Another very well represented group of plants in the valley is the genus Yucca (C) The characteristic arid landscape of the community of San Juan Raya.

6.2.2. Economic activities and their impact in the destruction of the environment

Emerging economies depend heavily on primary resources and the richness of their natural habitats, and so there is often a tension between governments looking for growth, and the conservation of the environment. (McKee & Tisdell, 1990; Tisdell, 1991). As countries in the developing world try to enhance their economic power, sustainable development is often not achieved and the habitats of species are increasingly destroyed, man is harvesting species at a greater rate than before, populations are competing with species for vital resources like water, food source and space, and finally pollution and degradation of the habitat are also decreasing wildlife populations (Tisdell, 1991).

Deforestation, and the high level of degradation of the remaining forests, are common problems in Mexico. Loss of primary vegetation entails grave consequences in terms of biodiversity, soil degradation and the prejudicial impact on ecosystem services, on which we depend. Deforestation reduces the natural resources available for national development, harms the quality of life and the possibilities of improvement of the living conditions of many rural communities in Mexico (Figueroa & Bonfil, 2011).

In recognition of the great biodiversity of the valley of Tehuacán-Cuicatlán and as a response to the need for conservation the Reserve was created in 1998.

With an area of almost 500,000 hectares, the Reserve is very extensive. The communities that live in these lands are not uniformly distributed, often living in remote areas with difficult access. Basic services in the communities are not sufficient and in the majority of the cases communities do not have the necessary infrastructure to provide basic services. According to official documents of the Reserve administration one of the main problems of the Reserve is that the levels of poverty generate low expectations in the development of these communities.

These documents also describe the direct pressure on the natural resources - resources the local people depend on for their survival. (SEMARNAT, CONANP, 2013).

The creation of the Reserve in 1998 brought, initially, only restrictions to the inhabitants of San Juan Raya. Administration of the Reserve failed to communicate the new regulations with isolated communities. Most importantly, they failed to provide alternative ways of survival to the communities that had been exploiting their natural resources in a way that was not according to Reserve regulations.

According Alvaro Reyes, an inhabitant of San Juan Raya, personnel from the Reserve approached them to inform them that they had to conserve their environment, however they were not given information on the regulations and they were not offered support in terms of seeking new economic alternatives.

They told us that they were part of our patrimony and that we had to take care of them because it is very valuable. So we started taking care of them. And so when the Reserve was officially decreed, around ten years ago I think, they told us that we had to take care of all the plants and conserve every living thing, animals also. (AR, 287-291)

In practical terms, conservation cannot be carried out effectively without the consent of local populations and the management of natural resources can become impossible task (Gibson, 1995; Heinen & Yonzon, 1994).

Inclusion of the original inhabitants of Reserves has often been cited as a prerequisite for successful programs of conservation, The World Conservation Strategy (IUCN, 1980) suggests that it is imperative to ensure that the people bearing the costs of conservation benefit directly from it.

According to Dr. Valiente, this is the issue played out in the valley when the Reserve was created.

What I think, and maybe people that are in the CONANP (National Forestry Commission) or in the Reserves don't see, I mean it's good to make Reserves but they cannot forget that there are many people living in them and that in Mexico there are 57 ethnic groups and they seem to be invisible and that it is ok to make Reserves in their lands without giving them more options to survive. (AV, 370-374)

Dr Valiente also highlights the fact that the lack of opportunities within the parameters of sustainability is a big threat to the conservation of the environment.

So I think that making Reserves without giving people other options means that you are going to have illegal tree felling and poaching as it has happened before and still happens in Mexico. The objectives of long-term conservation are not fulfilled because, as I told you before, more tree felling occurs because people are afraid that the government is going to take their lands away. (AV, 384-388)

As we have mentioned in the previous section of this chapter, the inhabitants of San Juan Raya used to be involved in traffic of plants and fossils. Alvaro Reyes, a community member of San Juan Raya and founder of the museum, tells how this trade used to sustain the economy of the village.

there was a lot of looting of fossils and plants, because we have always had many tourists. At least in the respect of fossils, I remember that we used to gather the best fossils we could find and we exchanged them for almost nothing with the tourists. Sometimes they gave us some fruits or some coins. (AR, 262-265)

Grown-ups and children were involved in the trade. Fossils were a highly available resource and their trade brought an income, though not considerable, to an impoverished population.

We knew where to find the best fossils and so when the tourists came they told us "Hey kids do you know where we can find fossils?" and well we were all putting our hands up "I take you, I take you". And so we use to take them to where the turritellas are, because access is easier there, it is very near and it is an area where, I swear you, when I was a kid, you could find a layer of twenty centimetres of fossils only. We use to move the earth with our feet or our hands we found fossils and more fossils, just like that. (AR, 266-271)

And so for many years we used to go there and gather the fossils in bags or boxes or wherever. We use to keep them at home for when someone came, and we would give them to tourists in exchange for food or clothes, and in spite all that looting we still have lots them. (AR, 272-275)

People that came looking to buy plants and fossils were not only tourists but also traders that took away great quantities.

On one time, some people came, they said they were Japanese, to buy plants, they came with an empty trailer and filled it, they took many plants. They took organ pipe cactus, from the biggest ones to very small like this (indicating very small with the fingers) and also barrel cactus, lots of them. Trailers and trailers were filled with plants and they took them. (AR, 280-284)

The state of poverty of the inhabitants of San Juan Raya was convenient for plant and fossil traffickers, who encountered people willing to exchange them for a few coins, fruits or clothes,

Yes, before, also with the plants. People came and bought them and we, without knowing it was wrong, sold them. They tempted us, because they knew we needed money and they came and told us "I'll buy you this, I'll buy you that". So we gathered the plants and sold them. (PR, 90-94)

There were many people that were interested in the pieces and wanted to have them, but they were not tourists. I think they wanted to commercialize

them, they sold the pieces. Many people came with clothes, food, fruit and well they told us, if you give us the fossils we can give you this, fruit or clothes. Many people were interested in gathering fossils and exchanged them (...). This went on for many years, people exchanging fossils for food or fruit or clothes. (PR, 20-26).

Researchers of the National University identified the potential for tourism that this area has, and that the capacity that exploiting their resources in this way could be beneficial to the community as well as to the environment.

Then I thought they had to take advantage of this, a phenomenon that is not found in many places, and it is a place that has been thoroughly studied, especially from the paleontological point, mainly by people of the Faculty of Sciences and other researchers. (AV, 35-39)

People don't imagine that in a place so arid and apparently deserted of life we can find so much biodiversity. Also not many people know or can imagine that this desert place is full with marine fossils of millions of years ago. (LS, 173-175)

That it is something unique that makes people want to come. And well people do come. (...) I remember it was that day that the idea of doing something in San Juan Raya that allowed people to improve their quality of life and helped conservation, started to develop. (AV, 364-368)

The creation of the museum responds to the need of creating alternative means of development that have the potential of improving their living conditions while respecting Reserve regulations.

So, I believe that it is very important, if you want to make a long term conservation plan, to give people more options of survival. I think that is the whole idea in the back of this project. To do something that allows people to decide to invest more in the protection of their environment and that allows

them to live better, so the option is to give them options, but it has to come from below. It is no good if someone arrives with the attitude of know-it-all or feeling superior to tell them what to do, if people don't get engaged with the project they are going to abandon it, as it has happened many times before. (AV, 393-400)

After the creation of the Reserve and the imposition of new regulations, traffic of fossils has stopped in the community. Juan Reyes Barragán, community member and founder of the guided tours, remembers the changes that this prohibition provoked in the community.

For me the change that was very important was when we had the total prohibition on selling fossils. That had a very big impact. So we had to think of a new step to take and in this case it was the construction of the museum. We didn't have the option to sell the fossils; we didn't have the option to exchange clothes or food for them, or to sell them; so there was a change in the life of many people. We started to work in the creation of the museum and by 1996 the first guides started to join (...) at that time it was a form of earning a bit more money, because we only lived in the tips that the visitors left. (JRB, 225-233)

Since the illegal trade of fossils signified a radical change not only in economic terms but also to their everyday activities, people had difficulties accepting the regulations that were forced upon them.

In 1998, with the declaration of the Reserve, well the people most affected with by the declaration of the Reserve were those very accustomed to their way of living and working. And when you start to tell them what to do or you restrict their actions, it doesn't go down very well. They had their way of living and sometimes they don't manage to understand in a couple of years, some time has to pass to let people get used to the new way of living. So the declaration of the Reserve had also an impact in our lives. (JRB, 225-240)

The exploitation of their fossils is now only through the museum and the guided tours that the community manages. In this sense, a sustainable alternative has been successfully developed.

Furthermore, people in the community have now a different vision of the value of the resources in their lands. Before, they were allowing outsiders to come and steal their resources, mostly due to high poverty, but also due to lack of knowledge.

people from the community did not know the importance and value of the fossils, people did not know that this was a sea before and that's why we have fossils now, people did not know that. So when people came to visit this place the people from the community traded fossils in exchange for something to drink, some fruits and clothes, whatever. (JR, 13-17)

6.2.3. The Museum as economic force

All interviewees concurred that the museum has had a significant impact in the community in terms of improving their life conditions and has provided them with a way to earn a living in accordance to regulations of the Reserve.

Since I'm here everyday in the museum I can notice the change. (...) And that is making that we have a better life, because we haven't got so many worries with money. We still have and are not rich or anything (laughter) but is better than before. (MH, 66-70)

Minerva Hernández recounts the many economical benefits that the presence of the museum has generated.

For example now there is a job source for all the women that do the handicrafts, all the palm leaf stuff, now that we have tourism well they are selling their work, their knowledge. And also for the kids in school well also,

maybe the parents haven't got many resources, but since we have tourism well they also win some money that maybe can pay for their bus fares. Maybe like this more kids can go to the secondary school that is far away. So I think that there is an improvement. (MH, 75-81)

Direct beneficiaries of the existence of the museum are the employees that take care of the galleries and the guides that take tourists on the natural trails.

Yes we see many benefits, especially the guides. We get many people on the weekends and the young people that are now going to secondary school, they go to another town because we don't have secondary school here, so they have to go everyday 8 km and back. And on the weekends they work as guides and see many benefits. (...) So the community sees many economic benefits. I would say that the museum has had a strong impact here. Around 80% of the community benefits directly and indirectly from the museum. (JR, 169-10)

Indirectly, the whole community benefits also from the existence of the museum.

Then the museum has served as a catalyst to attract visitors, to get people to do other activities, like handcrafts (...). So there has been something like a macroeconomic phenomenon that has created an improvement in the life conditions and it is noticeable. (AV, 163-166)

Alvaro Reyes, a member of the museum founding committee, explains the influence that the museum has in economic terms.

The most direct money comes from the guided tours and the entrance fee of the museum, but now also people sell they handcrafts, little shops sell their products, and for example the hotel, the huts, and the handcraft sale. And so although maybe the little shop that is far away does not sell directly to the tourists but if people that sell the handcrafts make money then they can buy things from this shop. And if we don't have income no one has anything. (AR, 172-177)

As mentioned before, there is a high index of poverty in this area of Mexico. According to the Reserve's management plan, one of the most pressing social problems that localities in the Reserve are facing is the lack of employment opportunities, which has provoked a mass migration of young adults towards urban centres of the country and to the United States (SEMARNAT-CONANP, 2013). In this sense, the existence of the museum has helped young adults that are working as guides a salary and the possibility to stay in their community.

But if I didn't have this I'll be in the United States as an illegal immigrant. Our options are here or there, maybe that is why some younger people are getting interested in these projects. So I can also help to inspire them and to demonstrate that it is possible, that we can create job opportunities in the area. (JRB, 350-354)

In terms of support from outside sources, the fact that the museum is working well has also allowed them to secure more funding. The inhabitants of San Juan Raya can prove that they have managed a project successfully, which makes them more suitable to be beneficiaries of other projects, from the government or NGOs.

But in economic and developmental terms, the town has improved (...) The museum and the ecotourism activities that they have now have made them more suitable to have more permits and funding. (CS, 143-147)

Alvaro Reyes and Primitivo Reyes stated that economic benefit that the museum has brought them also translates in the possibility to pay workers to do improvement work in the village, like the church or the school, or to give maintenance to the touristic trails.

... now this brings us economic benefits, gives us a bit of money to settle some money problems that the village has. We have to give money contributions, 100, 200 or even 1.000 pesos we have to give to pay for water, light, church,

everything. (...) And the museum brings funds and so we take money from the funds of the museum and we solve these problems. (PR, 141-151)

We give a percentage to management, money to do works here and there. So we use the money from museum's entrance fees and tours to take care of stuff like that. For example we are going to use the community's percentage of the earnings of the museum to put the roof on the hut where we are going to sell handicrafts. From the money we have, that belongs to the whole community. (AR, 137-141)

The impact of the museum, as an economic force, has been then, related to issues of ecotourism. Ecotourism has been criticized by academics as not a guarantee of sustainable development unless the benefit is evenly distributed in the population (Orlove & Brush, 1996; Tisdell, 1991). In the case of San Juan Raya, these activities have the advantage to minimize the direct pressure on natural resources and can provide an alternative means of support, as the earnings of the museum are equally distributed in the population.

6.2.4. Conservation and development in a protected area

As discussed in chapter four (page 94), a common conservation strategy is to create natural Reserves in which human activities are limited, so as to prevent environmental degradation. These strategies of course impose restrictions on hitherto accepted ways of life and economic activities. Typical adjustments included hunting bans, an acceptance of the loss of livestock to now-protected predators, and the loss of traditional or original lands (Tisdell, 1991). People affected by the creation of a Reserve will not necessarily be sympathetic to such a conservation strategy, and may be sceptical of, and resistant to, the demands imposed by Reserve personnel. For people to accept the moral justification of the new Reserve, some perceived benefit – an immediate gain – is likely to be needed (Tisdell, 1991).

But at San Juan Raya, as discussed before, there was a complete lack of information flowing from the Reserve administration – which led to the subsequent arrest of some people in the community. The creation of the Reserve imposed conditions on the community, which was not matched, at least at the beginning, with any real dialog over economic and life style alternatives that might now need to be explored.

As a result a truculent stand-off began to develop. The villagers' economic activities had been curtailed; no alternatives seemed available; in short a whole way of life seemed summarily threatened.

We were used to another way of life so there was indeed some questioning and resistance. "Why are they coming here to tell me that I have to have less goats?" and stuff like that. There was a lot of speculation about what the new Reserve meant: we thought they were going to take all our goats away and they were not going to let us cut anything anymore. (JRB, 313-317)

However, through the establishment of a communication process between government officials and community members, and the subsequent creation of development projects, local resistance to the Reserve has diminished if not disappeared.

According to Juan Reyes Barragán, some people are still reluctant to accept the changes.

And, well, now some 70 or 80 percent of the community is convinced that we have to take care of the environment and to have vision towards sustainability, but there are still people who maybe need more time to understand all the changes. So, yes, we have a bit of resistance." (JRB, 325-328)

Fossil and cacti trade were not the only activities that were suddenly regulated by the Reserve. Agricultural and livestock farming activities in the community have also come under new regulations, as part of the Reserve's conservation strategy.

So in terms of the conservation of their lands, the agricultural frontier is not growing, a shepherding route has been defined and they avoid shepherding some areas that they destined only for conservation, they make a rotation of areas were to shepherd goats. All of this to ensure that the environment is not considerably damaged and it does not look bad when visitors come. So, some activities that were anarchic in the past now have a set of rules. (AV, 263-267)

One aim of the Reserve is to conserve the biodiversity of the valley by maintaining the integrity of its ecological and evolutionary processes. Another aim is to maintain the cultural and historical patrimony so important to these lands. (SEMARNAT-CONANP, 2013). As soon as the Reserve of the Valley of Tehuacán-Cuicatlán was established in 1998, there was the need to establish forms of economic activity congruent with the parameters of sustainability.

The first question that was asked was "what do we do now with the fossils if we have too many?" so one of the options was to start with the museum, so we called the people to bring out all the fossils they still had in their houses and donate them to the museum, and we put them all in the building where the museum was. From that moment we started to have people coming to visit the small museum. (JRB, 220- 225)

To develop these new activities the people of the community were given training sessions by personnel from the Reserve's tourist board.

People from the administration of the Reserve and people from the tourist board of the Reserve as well came to give us training. (JRB 50-52)

Dr Valiente joined in the effort to provide the tourist guides with information about their vegetation and the paleontological history of the valley.

Also Dr. Valiente started to come to the community He also gave us training in some subjects related to Biology. We started then to know more about Cacti, because before we were very focused only on the fossils. And they started to explain to us about the importance of Cactus plants and the importance of this land and why it had been declared a Reserve. (JRB 42-47)

In fact, the close involvement of Dr Valiente with the community was born not from some desire to teach science – to overcome a deficit of knowledge – but from seeing the economic ineptitude of the personnel of the Reserve, who had failed to propose any substituting economic activity able to compensate for the curtailment of various traditional practices⁵⁹.

The way this started was when I saw that nothing was being done to improve the people's living conditions, and I'm talking about the time when they the Reserve was created. They had put all these restrictions on the people, I was always opposed to that - it is impossible to have a viable Reserve if you don't give people alternative options to survive, especially because people here live off the land, either transforming it for agriculture or collecting plants. And so, what happens? Poverty has a direct relationship with habitat destruction, especially in terms of transformation of the environment. (AV, 18-26)

After time, with the realization that viable economic alternatives were needed for those communities that suddenly found themselves living within protected lands, a

⁵⁹ During my interviews with Dr Valiente and Dr Elena Álvarez Buylla (who led the project in Frontera Corozal that I discuss in chapter 7) I realized that their involvement in developing the museums came not only from their desire to communicate science, but most importantly from a commitment to improve the social and economical situation of these communities. These scientists are, by no means, an isolated case. In Mexico numerous scientists are involved in the Union of Scientists with a Social Conscience. This union is integrated by scientists of different fields who collaborate with the aim of directing the advancements of science and technology for the benefit of society, of assisting in the supervision and control of the risks science and technology generate, and of making available the skills and knowledge of its members to society. A full description of this organization and their actions can be found online at <http://www.uccs.mx/> (Accessed, 20th March, 2015)

new policy developed encouraging activities related to ecotourism (SEMARNAT-CONANP, 2013). And because the community of San Juan Raya had been quick to set up activities related to ecotourism, this made them able to apply for funding to further develop these initiatives, and to start new ones.

So if we didn't have ecotourism practices in the village, then these incentives wouldn't land up here. (AR, 214-215)

When asked about the importance of conservation, community members mention, as we will see in the next quotes, the importance of keeping their lands in good state for the sake of tourism attendance.

Tourists come here because it is well conserved and because we have good stuff to show. According to some biologists that have come here to make their studies have told us that San Juan Raya is very well conserved. We have really a lot of plants. All this appeals to the visitor interested in seeing nature. It is all very well preserved, there loads of plants, lots of cacti to see: that's why people come! (AR, 378-382)

The realization of the importance of conservation was a consequence of the communication with scientists and Reserve personnel.

This is what experts from the Reserve and other institutions have told us in the workshops, they always say the same thing: "Thank God you still have very well preserved areas - you take good care of them because that is what attracts the tourists. If you start destroying it then tourists will not come because there won't be anything left." So you have to reforest areas that you think are deteriorating and have to take good care of them so that it is even better (AR, 383-388)

As a consequence of this realization the community has taken conservation measures.

So now we have to avoid over-grazing animals, we have to conserve the soil, put living fences⁶⁰ and stuff like that, and we are doing them. It is also because people have more of a conscience now about this, and because external people have told us how to actually do it. It's all down to the fact that we have these fossils and plants and, that people value them, and want come to see them (AR, 389-393)

However, as seen in the next two interview extracts, there was another discourse present: the importance of conserving the richness in fossil record and biodiversity for future generations. I could find, as I will discuss later in this chapter, a scientific discourse of the importance of conservation in the community.

Firstly because of all the fossils we have, we always knew about their existence, but we never knew why a rock could have figures. Now we know that this community was once a seashore and that dinosaurs walked in these lands, you imagine the jungle and the beach and everything. We have remains of this, from millions of years ago. (MH, 156-160)

San Juan Raya is kind of famous for being a zone with lots of fossils, because millions of years ago this was a sea and all that, and it is only logic that we have a museum to exhibit what was here before and what we have now. To show our richness now, but this richness comes from our past so we have to conserve it for the future. (AR, 166-170)

Ecotourism has brought the community many benefits. The people of the community are aware, however, that this tourism itself has to be run on a sustainable basis. If the tourism is not regulated it could have a negative impact on the environment, and so be counter-productive. It is a concern of the Reserve personnel, of course, but it is significant too that the local people are active in protecting the sites. They are active in the protection of the environment, and they impose rules on the visiting.

⁶⁰ A living fence is made of living trees and shrubs. In the community of San Juan Raya it is common to see living fences made of columnar cacti.

And we demand they take care of the site. Because if we don't take care of it then there'll be some environmental impact. So we emphasise they can't leave any rubbish in any place, the sites, the paths, the trails. (JR, 81-83)

The biological diversity that this region possesses suggests there is great potential for the development of tourist-related activities. Such activities will allow a sustainable use of resources, will provide alternatives for local people who need to re-build their income; in short these activities represent a synthesis of conservation, sustainable development, and community viability.

An important factor in the success of the project is that the community has embraced the museum. Inhabitants of San Juan Raya, as will be discussed in the second part of this chapter (page 188) have made this project their own. They have invested time and energy in it; and the museum has gone on to catalyse other projects. This success comes, partly, because the project was developed in collaboration with the community. It was not simply an imposition by the authorities.

According to Dr. Valiente these proposals are often unsuccessful after a couple of years, because they are not planned with collaboration of the community.

This country is heavy with proposals from above; proposals that people decided not to follow, either because they were not successful or because people didn't see their relevance. (AV, 408-410)

Dr Valiente attributes the success of the project to the fact that it has emerged with the participation of the people in the community.

But I believe that if the project comes from 'down below', from the people, then you can talk to them to see what they want to do and suggest things and offer your help in some way and then they tell you "no, what we need is your help in

that area or the other, then people really get organized and do things. (AV, 411-414)

Bottom-up approaches to development have been regarded as beneficial given that the inclusion of local citizens and community organizations in decision-making processes, not only increases efficiency, but also provides a real chance both to individuals or communities to transform their choices into wanted actions and outcomes (FAO, 2010).

The creation of guided tours for the tourists has been a very successful economic alternative for the people of San Juan Raya. Young adults and teenagers of the community have been trained to guide tourists to different nature walks. These tours aim to show the richness of the floral biodiversity of the lands of the community as well as fossil records *in situ*. This initiative also allows young people of the community to contribute to the economy of their homes. A guided tour costs between 30 and 200 pesos per person⁶¹. Only a small percentage goes to the museum, leaving the guide with the rest⁶².

Juan Reyes Barragán, founder of the initiative of the guided tours, mentioned that this project not only has attracted more tourism, but has also allowed them to have professional training in rural tourism.

Through this ecotourism scheme we have participated in some training sessions of rural tourism or ecotourism or what is called nature tourism. We give guided tours to attractive places such as the Turritellas park, the giant Biznaga, the Dinosaur tracks. The tour that most attracts visitors is the dinosaur tracks that I had the good luck to discover in 2006. People are very

⁶¹ The equivalent to these quantities is 1.5 to 9 Pounds Sterling. The difference in price varies according to the length and difficulty of the nature walk. The most expensive options include the rent of a horse or a mountain bicycle and last around 5 hours.

⁶² The profits of this activity constitute a significant economical entry for families in the community, given that the minimum salary in Mexico for an 8-hour working day is 70 Mexican Pesos (approximately 3 Pounds Sterling).

interested in those things so they visit because they want to know them. (JRB, 70-75)

The beginning of this project posed some problems with the personnel of the Reserve. Tourist guides at the start were federal initiatives controlled and regulated by the administration of the Reserve. Initially, authorities did not want to allow the people of San Juan Raya to become tourist guides. The people resisted and managed to arrange an agreement in which they were trained by professional tourist guides.

When the tourist guides from Tehuacán came, well, we had some problems. At the beginning it was because we the villagers told them that in the museum and our lands we were going to be 'explainers'. So at the beginning we had problems, because they didn't want to accept that we were giving the tourists walks in our own territory. (JRB, 17-21)

Again we can see the difficulties that the community has faced in making decisions about the management of their own resources.

And well maybe they were right, because we had no experience handling groups and explaining to people, etc., but we were also right because we are the owners of these lands and we were just looking for a job and a way to support ourselves and have an alternative in terms of work. (JRB, 21-24)

According to Primitivo Reyes, one of the oldest members of the community and founder of the museum, people of San Juan Raya are proud of their lands and are involved in the conservation of the environment.

Well because we are in a region where the fields are very beautiful, the hills, the mountains. And they are very beautiful. But if you go near here to San Lucas there you'll see how they have cut all the plants and now is like a desert, they use it for agriculture and the hills are empty. But on our side, on our land we have very beautiful hills, there are some places where we cannot even

access because it is full with plants and we feel very proud because we have the best lands, we have the best, and we have to protect it. (PR, 281-288)

Juventino Reyes, another of the founders of the museum explained the actions the community is following to ensure the conservation of their lands.

We are now conserving the white-tailed deer, we are trying to have less goats because they are predators, also the donkeys that eat cactus, well we are trying to have less and to try avoid having them loose in the mountains. We have many good agreements, although sometimes it is hard to carry out those actions, but we do them to conserve. (JR, 210-214)

The fact that their lands are so rich in fossil deposits is considered a blessing:

thanks to the blessing that we have the fossils. (PR, 233)

This shows that community members are proud of their lands and the richness they entail. This, undoubtedly, has been a contributing factor to the establishment of actions of conservation of natural patrimony among the population of San Juan Raya.

Looting of wild cacti is still a problem and the community has established a patrolling system to avoid people stealing from their lands.

No, not in the case of fossils, but looting of plants still happens. Because sometimes people foreign to our community come with their cars and take away some plants and we are fighting to stop that. (PR, 241-243)

There is now an understanding that conserving their lands in good state will bring longer lasting benefits to the people, than would accrue simply from the selling of fossils to traffickers.

It is better to have a small benefit for many years than to finish a plant in minutes. If we conserve them we can profit from plants for many years. (JR, 223-224)

Juventino Reyes, one of the founders of the museum and the president of communal goods at the time of my first visit to the community told me people of San Juan Raya were transmitting their ideals of conservation to the visitors.

So, to all the people that come here and show interest in knowing stuff, we tell them what we know. We tell them the importance of the plants and the importance of the conservation of what we have. (JR, 160-162)

This section has given the background to the founding of the museum. In the second part of this chapter I will explore the creation of the museum, the management of the project and the type of interactions between the community of San Juan Raya, researchers from Mexico City and the personnel of the Reserve. I will also look in more detail at the role the museum has had in spawning new projects and forging a change of attitudes.

Part 2.

6.3. The palaeontology community museum of San Juan Raya

6.3.1. Introduction to the museum

The museum is located just off the main road of the community of San Juan Raya and just a few streets away from the town centre, where the church and school are located. The building consists of one reception or lobby and four rooms arranged in a circle and connected through an internal garden. The museum's entrance has a wide staircase and a large sign bearing its name. On both sides of the sign there are depicted two dinosaurs (Figure 10A). The museum is in itself not large. However compared to the other very modest buildings of the community – the houses, the school and the church - it seems quite tall, elegant even.



Fig 10. (A) The entrance of the Community Museum of Palaeontology in San Juan Raya. (B) Diagram of the building of the museum

The first room is the reception, where the explainer of the museum greets visitors. There is little decoration here: just a desk and an introductory panel to the museum. The panel outlines the history of the museum, how it was funded, and it

provides a list of people who helped create it. The museum galleries are located in the two front rooms. The two back rooms remain empty (Figure 10B).



Fig 11. Galleries of the Museum of Palaeontology of San Juan Raya.

When you pass through the reception, you find the first gallery on the right. There, a numerous collection of fossils is on display in glass cases. There are explanatory panels on the processes of fossilization and on the geological history of the area.



Fig 12. (A) Museum panel explaining the geological history of the Valley of Tehuacán-Cuicatlán, (B) Detail of the Dinosaur mural in the gallery of palaeontology (C) Museum panel explaining the modes of fossilization, (D) Museum panel narrating the human occupation of the valley.

It is noticeable that each group of fossils is correctly labelled. However, there is no systematic arrangement or biological explanation of the taxonomy of these fossilized animals and plants. In contrast to what one would expect in a typical Natural History Museum, the fossils here don't have an individual label with their species and their date of collection. Instead, the fossils are labelled in groups according to their genus, their class and their phylum. For example, for the *Turritella* fossils the label reads: Mollusca, Gasteropoda, *Turritella* (See Figure 13).



Fig 13. Glass case exhibiting fossils found in the area. They are grouped by Genus

Furthermore, the arrangement of the fossils in the glass cases and the layout of the cases in the room do not correspond to the taxonomic relations of the specimens.

In a corner of the ceiling of the room there is a big mural depicting dinosaurs and a volcano in eruption. The people of the town commissioned the mural from a local painter. The dinosaurs shown have no biological relation to any of the fossils in the room, and have no scientific accuracy (See Figure 12B)

The second room is divided into two smaller rooms. The first has a glass case only, with some impressions of dinosaur tracks. The second room shows archaeological remains of the early inhabitants of the valley.

The community museum of San Juan Raya does not only consist of the exhibition galleries. An important part of the museum is outside the building. As described earlier, visitors are offered guided tours to sights and places of interest within the community. People of the community offer these guided tours in which they show their lands to visitors. There are walking tours to six different locations around the community to see fossils in the place where they were originally found. Another tour takes visitors to see dinosaur tracks in a dried riverbed; and there are walks for admiring the landscape and experiencing the flora biodiversity in the lands surrounding the community (See Figure 14).



Fig 14. (A) Entrance to the Turritelas Park, one of the walking tours are offered to visitors by the community. (B) Structure to allow visitors to approach dinosaur tracks (C) The dinosaur tracks in the dried river basin (D) A community guide gives an explanation of the dinosaur tracks to tourists. (E) Touristic path through the characteristic vegetation of the area.

The museum is a communal property and it is managed by a committee, which is appointed in the community's assembly by public vote. The people that are appointed to manage the museum change every year or two and their work, as it is a service to the community, has no remuneration. However, the museum also employs several people in the community. Two people take turns working as receptionists and explainers of the galleries and there are around 10 to 15 guides who take tourists on the walking tours. This is not a big number; however, given the small size of the community this represents a considerable number of jobs. The two receptionists receive a fixed salary, whereas the tour guides earn according to the number of tours they lead.

6.3.2. Creation of the museum, reclaiming control of their patrimony

As discussed before, the level of poverty in the community of San Juan Raya is very high. The possibilities of development are dominated by the protection laws of the Reserve. The creation of the museum was a response to the necessity to create alternative means of resource exploitation in accordance to conservation laws. The idea of creating the museum, however, did not come from community members. In their statements all agree it was someone from outside the village who proposed the idea.

And so someone said, I don't remember who, they told us, you can make a museum for people to come and see the fossils, rather than taking them away with them. And we got organized, we made a committee, ten people, and then we went to Puebla to see if they gave us permission to do the museum. And yes they gave us permission to do the museum and well they gave us all the papers there. (PR, 58-62)

We started to gather the pieces and to put them in the museum. All the people were happy, they said it was a great thing that the most beautiful pieces we had were being showed in the museum. And so we gathered the pieces and that's how the museum started. And I tell you if that hasn't happened to us then maybe we would have kept just exchanging the fossils for food and clothes. (PR, 64-68)

Someone came and told us, I don't remember exactly who, you can exploit the fossils, you can get something out of them, but you have to build a museum, we have to recognize it before INAH (National Institute of Archaeology and History) and that is how the idea was born. (AR, 44-49)

There were always these people coming, people from the UNAM, from many places. Saying why don't you do this, why don't you do that, and, well, we thought this idea was a very good idea - I don't remember exactly who it was. (PR, 73-76)

In Mexico, the historical, anthropological, archaeological and paleontological patrimony is under the guardianship of the INAH (National Institute of Anthropology and History). INAH is a federal government bureau established in 1939 with the aim of preserving, protecting and promoting the Mexican heritage. Its main offices are in Mexico City; however they have regional offices and of course their jurisdiction covers the entire country. They are responsible for safeguarding over 110,000 monuments from the postcolonial times and around 200,000 pre-Columbian archaeological zones. All museums that exhibit objects as part of the country's patrimony must seek the approval of INAH.⁶³

Before creating their museum, the inhabitants of San Juan Raya formed a committee and travelled to the city of Puebla to ask for permission to create their museum.

We recognized it was a good idea and we started with the museum and thank God we have been successful. Well I think that. I was one of the ones that started with this, ten of us got together, went to Puebla for the permission.
(PR, 79-82)

After approval was granted, the government at first provided no funds or support. The museum started, according to the statements of community members and researchers, with just a few fossils exhibited on wooden boards in an unused room of the police station. Later on, community members turned to Dr Valiente for help to apply for funding to government institutions in order to improve their museum. Dr Valiente then became involved and helped people in the community to find funding.

The fossils were put there in the police station, we put them on some bricks and wooden boards and so we started exhibiting them and so when visitors came we showed them the fossils. (AR, 55-57)

⁶³ Information about the mission, vision and activities of the National Institute of Anthropology and History is available at www.inah.gob.mx (Accessed, 17th September, 2014)

The collection of the museum was made with all the fossils that people had gathered in their houses from the time they were trading them with tourists.

In 1996 we asked them to donate some of their pieces and we set up the display in the room of the police station, (...) We started to exhibit the pieces on some wooden boards, in a very rustic manner. We started like that with the museum. Afterwards, we applied for more resources, with the help of the Institute of Ecology of the UNAM, the doctor Alfonso Valiente. We participated in a project with PACMIC, the Department of Popular Culture, to improve the exhibition of fossils and the history and to be able to put more in the museum. (JRB, 32-39)

We applied for funds two years. They helped us to write the proposal, and the first time we didn't get it and on the second or third try we managed to get the funds. And the Institute of Ecology of the UNAM, and all the other people who supported us, well, you can find their names here in the museum's panels, they helped us to make the project with the 30.000 pesos of funds. We got a lot done with that small amount because we didn't have to pay any salaries, because all the people who supported us worked for free. (JRB, 32-45)

According to Carlos Silva, a junior researcher at Dr Valiente's laboratory, the creation of the museum originated from Dr Valiente as a way to create economic opportunities for the people of San Juan Raya and that it quickly was taken over by the community.

The museum was not originally a government initiative, the idea was that of Dr. Valiente and the community people. Everything started very rudimentary. The idea was that the people could have certain profit, both in terms of development and of money. And, well little by little, they started to get organized, to agitate, to ask for funding and they started to have money. And if you agitate to get money sometimes you get it!. Well if your project is well presented and praiseworthy. So that's how the project of the museum started,

in a very small scale, at the beginning the museum was in the police station.
(CS, 30-39)

The creation of the museum was discussed in an assembly with all members of the community. Once everyone gave approval, the researchers could proceed with the funding strategy.

Then the authorities of the community called for an assembly, as you know, everything is communal property and so everything is decided in an assembly.
(AV, 65-67)

So the assembly was carried out and we explained how this could be done, but the first thing we said was that we had to have the support of the whole community. So we talked a lot about the subject in that assembly, I took the papers of the grant application and with a typewriter we filled it out then and there. Someone once showed me pictures of that day, we put the typewriter on the hood of a pick up truck and we were typing there. With the whole community we discussed the main points and agreed on what people wanted, then a small group, including me, filled out the proposal. (AV, 67- 74)

The communication of Dr Valiente was with the whole assembly and every decision was validated or refuted by all members. This inclusion and transparency in the decision making process has been a determining factor in the appropriation of the project by the community.

Well actually when the project of the museum started I was working as a laboratory technician with Dr. Valiente. He told me that the people of San Juan Raya wanted to make a museum and that they needed our help to look for funding. So I was in charge of making the paperwork to apply for funding. That's how I got involved. I know the people of San Juan Raya were interested in making the museum and they asked Dr. Valiente for support on the project. So I made several trips to San Juan Raya for the papers we needed and I submitted them to the funding body. (LS, 11-17)

Dr Valiente, who had been conducting fieldwork in the Reserve for more than 20 years, recognized the economic potential of exhibiting fossils for visitors. His vision, as he tells it, was to find a way for the people of San Juan Raya to build alternative economical activities.

The idea was to have a place which visitors could enjoy, especially because of the interest of so many people in seeing these fossils. Back then they had the fossils in wooden boxes, but it was assuredly an impressive collection of ammonites, and well other things. So, we decided to make a community museum. So that is how it happened, through this situation. (AV, 55-59)

The interest of Dr Valiente to help people of San Juan Raya to have better living conditions comes also from the desire to remunerate them in a certain way for letting him to carry out research in their lands.

Also as a way to pay back the favour, and well friendship, we are good friends and well I was also interested in helping to improve their life conditions.” (AV, 60-61)

Once funding was secured, Dr Valiente requested help from a group of museographers he knew, called Margen Rojo. This agency had been involved in creating some science museums in other cities in Mexico.

I had worked with people from a company called Margen Rojo, which are excellent museographers, (...) I know the director, Ofelia Martínez and I said to her, “Are you interested in doing charity work?” And she asked what it was about and so we had a meeting and I told them the kind of museum the community wanted to have; and so they wanted to meet the community and see the building. (AV 78-84)

Lugi Sotibrán, now a postgraduate student of Dr Valiente, was working at that time as a laboratory technician with Dr Valiente. She was involved in the creation of the museum.

And when we got the support I also went to a meeting with the people of Margen Rojo,, the group that designed the displays, to convince them to help us and work for free. With the money that we got we made the panels, the cases for the pieces, the painting of the walls, all the necessary items to transform the old police station into the gallery. (LS, 18-21)

So we did the script and then the people of Margen Rojo started working on it and PACMIC, the people from the grant, gave us 30,000 pesos. Don't think the money was a lot eh? It wasn't much but we did miracles with it. The display cases were made, the selection of pieces, we had to make a selection because there were too many pieces and, well, we had an exhibition! (AV, 93-97)

The inauguration of the museum is remembered as a joyous occasion by everyone involved.

Well the whole community was present, the people of Margen Rojo and us lot from the lab. We cut the ribbon and declared it open. Well, someone from the community did, can't remember who. And then there was a party. Many people in the community helped to prepare lots of food, they even killed a goat for the occasion. It was a big party and everyone was very, very happy. (LS, 95-99)

So someone went for the Maguey nectar to make pulque⁶⁴, another one killed two goats, someone else made food, a stew, then everyone is involved. So the community gave an amazing welcome to the people of Margen Rojo and they were very moved by it. (AV, 421-425)

⁶⁴ Pulque is a traditional alcoholic beverage made from the juice of the Agave plant (also called "Maguey" in Mexico).

Once the museum was successfully in place, the tourism board of the Reserve started bringing visitors to see the museum. The community members remember that sometimes the tourist board guides took the visitors also on walks in their lands to admire the biodiversity. It is then that some community members, among them Juan Reyes Barragán, had an idea: why not set up some established trails for the tourists?

The officers of the tourist board came sometimes with their own guides and sometimes they stopped at the museum, but sometimes they just came to visit the hills, the ravines, the basin, and other places where they could find fossils and we just stood there watching them, until one day we had the idea of doing it ourselves. We thought: it can't be that hard to take tourists to our lands and explain things to them with the little knowledge we have. And that way three other guys and I started doing the walks. (JRB, 11-17)

With this initiative, the community showed its interest in taking some control of the possibilities offered by the museum. Initially this idea was not welcomed by the tourism board but eventually they gave community members the right to carry out the guided tours in their lands.

So we told the board that they could bring the tourists up to the museum but from then on we would take over with the walks. We started to make the first tours without any experience, the only example we had were the university lecturers, who we'd seen explaining things to their students and so this way we got going (JRB, 24-27)

This is an example of the effect that the constant presence of researchers has had in the community. People of San Juan Raya have had the motivation to learn from the outsiders and start applying this knowledge to their benefit in exploiting their natural resources in a sustainable way.

Mostly we made walks along the riverbeds because people were mostly interested in fossils, and so with the little we had heard those palaeontology

and geology teachers telling their students we started taking people where the fossils were. So we started acquiring the knowledge from the teachers of geology and palaeontology that took their students to these lands. Afterwards we started to practice and we started to do walks, at the beginning they were not very defined. (JRB, 28-33)

This is consistent with the ideas of Butts who states that one of the forms of resistance subtended by indigenous groups against autocratic powers is to reassess and reclaim their cultural property and its interpretation (Butts, 2007). By challenging access to their lands to tourist guides from outside the community, and getting organized to carry out this job themselves, the community members were in effect wresting control of their patrimony from the Reserve. The guided tours therefore, became a tool for resistance against the authorities that were denying them the right to carry out their traditional economical activities, and were paying scant regard to the need to explore alternatives. Certainly the community members were active in their own analysis of the developing economic problem, and in finding solutions.

After a few years the museum was not only self-supporting but was bringing wider economic benefits to the community. At this point the community began the construction of a new larger museum. Funding was obtained from the Reserve with funding from the administration of the Reserve to construct a bigger museum.

And well we are now currently constructing the new museum, you have seen it, it is around 600 or 700 metres from here⁶⁵. It is almost functioning. And well now we have the support of other people, mainly the people from the Reserve. They have their offices here in Tehuacan and they are giving us their support to do this new museum. (JR, 48-50)

⁶⁵ During my first visit to the community of San Juan Raya the museum was still located in the police station and the new museum was almost finished. One year later the new museum was functioning. All photographs presented in this manuscript show this new museum.

For the new museum, community members did not always rely on researchers and museographers to carry out the content development and the design. They started to take decisions themselves, based on the knowledge they had acquired from the previous collaboration with researchers.

Well we haven't really applied everything they told us because sometimes to stretch the budget we have had to make some modifications to the design and so sometimes the design or the accommodation of some material is different. Also because we are working in stages and we have tried to stretch the budget as much as possible. (JRB, 123-126)

The project has been developing in stages due to funding problems, a stop-start process. The finalization of the project was possible due to funding from the World Bank.

The new building was designed by an engineer in the town of Zapotitlan and, well, they made the new design and from there, with communal unpaid work from people from the community, we got to work. And we submitted the project for funding to buy material. Then we waited for two or three years, and then we submitted again the project for more funding and we started the construction of what is now where the reception desk is. Afterwards we secured a funding from the World Bank and with it we finished the final two rooms. So it was in this way that we built the new museum. (JRB, 132-139)

As with the first museum, decisions were made in the assembly. However, this time, the community had to comply with the deadlines of the sponsors. This posed some problems: the deadlines, imposed from outside, did not accord easily with the way the community had previously dealt with outside help. According to community members they had to finish the museum without the help of professional museographers, and could not work regularly with someone from Dr. Valiente's team.

In the old museum, in the police station, we had a design done by the people of Margen Rojo, and it was made for that other space. So when we transported the fossils to this new space, well it was a race of the museum president and another colleague that was working at the museum as well to equip the two galleries. Also the World Bank was financing our project so they came to visit us to make sure that we were using the resources as we told them, so they came and saw the two finished galleries and so they told us that we should open with this two galleries and then assess how we where doing and ask for more support if we needed it later. (JRB, 144-153)

And we had been working in the museography with Margen Rojo but since we didn't have much time, well, we couldn't work with them again, they couldn't be part of the project, so we couldn't have a well-made museography. We did it ourselves, the people from the community, some students of Dr. Valiente also helped us to arrange the pieces, and we did the documentation ourselves by looking at books and stuff. But we are not specialists in museography: we lack a museographic design to make it better. (JRB, 155-161)

These new conditions left the community with no possibility to count on long-term support from researchers and museum professionals. However, the collaboration with the scientists continued whenever possible. Carlos Silva, a member of Dr Valiente's research team mentions that he provided punctual help to the community in the development of the new museum.

I tried to go and advise them, I mean I'm not a paleontologist, but I went there to tell them which fossils were molluscs, echinoderms, etc. I took a very big book with me to try to help them. But the people from the Reserve didn't help them with that. (CS, 56-59)

We managed to get more fossils and for that we had someone from Dr. Vali's lab helping us, for the identification of the specimens. But that was all, for the rest of the museum we took the decisions ourselves. (JRB, 168-170)

The new museum has four gallery spaces (Figure 10B, p.168) and a reception room. One room is dedicated to the paleontological findings and the other one to archaeological pieces. The other two rooms are empty and community members have yet to reach an agreement on their use, and secure funding to complete them.

We designed the archaeology gallery, the palaeontology gallery, the reception desk room; and for the other two galleries we haven't decided what to do, some people think we should put more fossils, and there is controversy in the assembly of the community, because some of us want to make these two rooms a bit more different, so that we can show the visitor different things. One option would be the natural history of the place, maybe some environmental education, so that the museum has more diversity and the visitor can see different aspects of this region. (JRB, 175-185)

So we're thinking that we might do something different in the other two rooms but also integrate the four of them, so that they share the same idea. (JRB, 183-185)

The lack of long-standing collaboration with outside experts has left the community to decide themselves what they want for their museum. They are actively taking decisions, through their traditional assemblies, of the content that the museum must have. This, as we will see further, will have an impact in the revalorization of their cultural identity.

The fact that community people has expanded the project, secured funding and taken decisions in regards to content of the galleries shows that the people of San Juan Raya have indeed made the project their own, and value their role as participants. Participation is very high and the villagers have successfully organized themselves in setting up the new museum and launching the guided tours. Inevitably there have been disagreements, as well as a lack of interest from some members of the community.

Some people do not understand the benefits that the museum brings us and so we have some conflicts and sometimes fight. (PR, 159-160)

Primitivo Reyes, who has been actively involved as part of the museum committee for several years, states that the lack of interest is because some people do not see the benefits that the museum or does not believe that benefits are equally distributed among all community members.

But some people do not value the museum, some people say "I'm not interested" Some people are even against it, only one or two people: they say it is a waste, because it does not bring us benefits. But if you really look, you'll see that it does brings us benefits. Yeah but, I tell you that is a personal opinion. Some people don't like the museum, people from here, they dislike our museum and say that it does not work or that the only people benefiting from it are the people involved in the management of the museum. But, that's not true the benefits are for everyone. (PR, 173-180)

He defends his position and argues that all that show an interest can participate and that benefits reach the entire community.

Even young people, as soon as the tourists arrive, they go with them as guides, sometimes they even rent their horses. Everyone that wants to participate does it. (...) So we all have benefits. We are all involved and we all benefit from it. It's not a lot, but it is something. (PR, 92-94)

There are people that at the beginning did not understand but little by little they begin to understand the value. (JR, 218-220)

Overall, as we will see in the next sections, the fact that the museum is managed as a communal good and that everyone in the community has been invited to participate has helped to increase acceptance and valuation of the museum as an important part of the community. Let us now turn to a closer examination of the process of appropriation.

6.3.3. Participation from outside experts and process of appropriation

As suggested by many writers, the success of a community museum can be linked to how deeply involved the community is with the project, i.e. how much interest there is in participating in the project (Ducet, 1999). As we have seen in the previous section, the creation of the museum was a result of the prohibition of by Reserve regulations of the sale or exchange of fossils. The initial idea of creating a museum did not come from community members. However, people of San Juan Raya accepted the idea of the museum from the beginning and they collaborated with outside researchers, academics and government officials in the creation of the museum.

The drive the researchers had in establishing a good relationship with local people was motivated initially by the scientific interest that researchers had in their lands.

And in terms of the museum and the people of San Juan Raya, and well in general the people of the valley of Tehuacan, Dr. Valiente has always had the idea of working with them. It is a bit of diplomacy; you have to arrive first and talk to the people and win them over, because at the end they're the ones that can help us, that can give us permission to work their lands, so they can either facilitate things for us or hamper the process. So Valiente has always had the idea of working with the people. (CS 25 – 30)

According to Carlos Silva, in terms of securing access to research areas and subjects it was necessary to be in good terms with the landowners.

what was important for us was to have planted the seed of a good relationship with the people. (CS, 49-51)

The communication between researchers and community members started with the former asking permission to carry out research in the lands of the community.

Well the people were asking us what we were doing there. People always ask us. When we arrive in communities we always ask permission first from the people and then from the government. And if the government doesn't give us permission then we don't give a damn! Really! But we have to ask permission from the local people, because it is their land. (CS, 252- 256)

Once permission was granted and research started, scientists were approached by community members curious of the investigation that was developing in their territory.

And after, if they give us the permission to work there, people from the community always ask us, what are you doing here? What for? They have doubts and are also curious to know what we're doing. (CS, 256- 258)

The scientists then made the commitment to explain their research for the community.

Sometimes we tell them that when we finish the job and we have some results we'll explain what we've done and what findings we have. (CS, 259- 260)

But aside from the scientific motivation that brought the researchers to work with this community, the group of researchers was also highly interested in helping the community develop alternative economical activities, to assist the conservation of the environment. Furthermore, given the level of poverty that this community presents, the researchers were also committed to help them to improve their living conditions. This concern with contributing to an improvement of the living conditions of the community can be seen in the following statements from Dr Valiente.

And that was one of our reasons for collaborating with them: to improve people's lives and to get them interested in taking care of their resources. (AV, 173-175)

When there is a social bond that forms between people then the project is going to be successful without any doubt; it was like that with this project. (AV, 447-449)

Then my contribution was like a reward, as a thank you gesture, because they let us work in their lands and do long term experiments. So that is how the relationship with the people started. (AV, 39-41)

The creation of the museum was then seen by both sides as an alternative means of support that was going to allow community members to use their resources in a sustainable way. The development of the project was collaborative in many of its stages, and decisions were taken by public vote in the assembly. The scientists agree that the success of the project lies in the fact that the project was not imposed on the community, as is often the case with other government developmental projects:

Many people from villages are used to getting help from the government, (...) Then money comes and people participate and that's it, but these are not proposals that come from the base, these are not proposals that arise from their needs, they get the funds and then when the money stops coming the project is over. (AV, 126-133)

For the museum project participation was sought and the community was involved in many stages.

People from the community helped all the time, painting and putting the pieces and cases, we all cooperated, Margen Rojo people, the authorities, us, people from the community. We have pictures that show the whole process. We slept outside in the camping area. It was a lot of fun. (AV, 98-101)

However, in regards to the content of the gallery, the community was left out of the decision-making process and scientists developed the museographic script without

any input from the community members. The content of the galleries remains purely scientific, some of the subjects exhibited in the panels of the museum focus on geological eras, processes of fossilization, ancient human settlements in the valley, etc. Given the level of expertise required to communicate these subjects the community was left outside of the creation of the first museum.

That was the work of Dr. Valiente entirely. He contacted from the beginning some professionals, a company called Margen Rojo, to do the museographic script. And they helped to plan and carry out the design of the first small museum, they did the panels, printed them print them, the script, the design, everything, all the things they know how to do, they practically did all of that. We did the scripts, with help of other people. But the panels and the design were done by professionals. It was not a massive work, but also it is worth highlighting that they did it for free. (CS, 83-89)

From these testimonies we can infer then, that the creation and development of the museum did not have the same level of participation over all areas. Using the classification of Nina Simon (2010:187), discussed in Chapter 3 (page 80), the community only contributed variably to the construction of the museum, in this case providing some archaeological pieces or painting and preparing the galleries; decisions on how to exhibit were left to professionals.

I mean they had an idea of what they wanted to exhibit, but more in the sense of the pieces that they had and wanted to exhibit, which pieces to exhibit, who had good pieces in their homes to donate. They decided what to exhibit at that level. (AV, 108-110)

People participated by working with us, with their hands, painting, fixing stuff. (AV, 115-116)

Yes, we helped the experts when they came to do the museum. Painting the rooms, putting all the fossils, etc. (AR, 80-81)

No we just collaborated in the work of putting it together. (AR, 86)

In summary the experts decided everything in terms of content and design while the community members only collaborated as workforce during the construction of the galleries.

Nonetheless, the process of appropriation of the project by the community members has been very successful, and participation has risen over time. The museum and its associated projects are set to develop, and the importance of having the museum in economical and conservation terms is well understood by community members.

On the contrary, now you see more people involved in the museum, at least a big part of the community that was not involved before, because they couldn't see the importance of it. (AV, 261-263)

I have worked in some communities that have local museums, mostly in terms of archaeological pieces that they have found. However I have never seen a community so committed to their museum. Here they have tours for the tourists and it's the same people of the community that do them! They are in charge of their property, so they are in charge of their heritage as well. Because this is a very poor and very remote region, they do not have many opportunities of having a good income, so I think the museum provides them with that. (SM, 167-172)

And so it is going and people organize themselves and have motivation and spirits to show what they have, their history, their richness, in natural and other terms, even if it's not much. (CS, 207-209)

As the project of the new museum building took shape, the collaboration with scientists, as we it has been discussed previously, lost some momentum and the community took more decisions on their own. The scientists are ambivalent about this. They do not believe the community has the resources or the knowledge to develop a scientifically- correct and museographically- attractive exhibition. However they do not intervene in the decisions of the community and provide only help when the community asks for it.

In general they do everything by themselves in the museum. We are always in touch in case they want to ask me something or something like that. Now, after we designed the first museum, the CONANP⁶⁶ proposed they build make another one. Our reaction was "What for?" But people from the community did accept, because the current museum is in the police station, where the authority is. But they built a huge white elephant!. (AV, 562- 567)

You are going to see it. They did a very big construction, I would dare to say it is even megalomaniac. The problem with making something that big is that you have to fill it and make a museography that has a discourse, and a narrative line in that discourse; and well the problem with very big things is that you need more funding to fill it and to make it look well. (AV, 568- 572)

It seems like the personnel of the Reserve, seeing the success that the old museum had quickly decided to make it bigger and better. The problem was that the community had no support from museum professionals or scientific advisors, which left this new museum with scientific inaccuracies and some faults in the museography.

I do not like the way the murals are done. The idea was to follow the same design that the other museum had, and they did not follow it. There is a lack of texts explaining what the specimens are, and there is a lack of information for the visitor. They need to find a fossil expert to tell them which specimens, in

⁶⁶ The acronym CONANP stands for Protected Natural Areas Commission (in Spanish), the governmental office that is in charge of administration of the reserves in the country,

terms of species, they have there. I think the museum could improve a lot, but the community seems to be content with what they have and do not want to make it better. (LS, 109-115)

Well I think it's not too bad because this is their museum, it's just that the people of San Juan Raya do not understand how best to design an exhibition and nor do they have the scientific knowledge to be able to construct a paleontological exhibition in a correct way. Look - the mural they put there has no scientific accuracy! (CS, 96-100)

But as I said before it is their museum and they should be the ones in charge. The problem here is that the people that gave them the funding put lots of pressure on them to open the museum as soon as possible, so the people of the community rushed things and did not have time to consult experts to develop the exhibition. That is why is full of mistakes. (CS, 100-104)

We can see then that to some respect the exhibition was more accurate, more scientific and more collaborative when funding was less and there were not any other agendas to follow. The collaboration between community members and researchers was small scaled and local and involved only groups that trusted each other and that had a genuine commitment to the project.

Despite being left out of the decision making process of the new museum, Dr Valiente harbours no resentment. He and his team continue to propose to the community members various ideas for improving the museum.

I proposed that we should now not only talk about the Cretaceous, when there was the sea; as they also have those dinosaur tracks let's go back in time and talk about the dinosaur area, and then we can talk about the sea. To see the historical timeline from the dinosaurs until the last thousands of years (AV, 578-581)

Lugi Sotibrán, a researcher of Dr Valiente's team thinks that the new museum should also reflect more on the community itself and exhibit more information about the inhabitants of the community and their relation with the environment.

I also think that they need to expand the subject of their museum, not just about Palaeontology. Talk also about the place in which they inhabit, the environment, the ecosystem, the plants, the animals.(...) A bit like a "site museum". Palaeontology could remain as the main subject but I think they should cover other subjects and aspects relevant to the communities. (LS, 121-127)

Despite the friendly scepticism of the scientists, community members are confident that they are capable, with the occasional advice from experts, of maintaining a successful museum.

We decide everything in reunions and assemblies and well we also count with the advice of experts, and so we will try to make the better use of all the rooms we have. (JRB, 189-191)

It is well understood by the people of the community that participation by as many people as possible is a key factor in the success of the museum.

I think that to make the museum more successful we have to put more effort into it and make more people interested in participating. (AR, 154-155)

The fact that community members have appropriated successfully the management of the museum has given them responsibility of their heritage, which contributes, on a community level, to peoples' empowerment. (Alsop, 2006).

And little by little they were organizing themselves, not only with the museum, but with other initiatives, they are people that fight hard and have been able to get organized and improve. So I believe that the museum was a turning point in that sense. (CS, 134-137)

Sugey Martínez, the schoolteacher, affirms that the inhabitants of the community are a vital component of transmitting their intangible heritage.

We see them as submerged in a place that it is unique in the world. So it is very important because this is a very small community and they are in charge of transmitting this knowledge and their history is passed from generation to generation. Information is not only in books or in the museum, they are the ones that transmit the knowledge of this community as well, you could say that they are the living museum. (SM, 107-112)

She affirms that the museum is not only in the collection in the building or the guided tours, but also each community member, since they hold the knowledge and are able to transmit it to visitors.

They know what is there and what not in the village and the environment and the museum, they can tell you everything. And they can transmit this knowledge also when they get out of the community so even if you don't have the opportunity of coming here and they tell you what is in their community you will get the chance to imagine and do some further research. So they are part of the museum. (SM, 113-117)

Primitivo Reyes, one of the founder members of the museums affirms that even if they have no formal education and are not very articulate in their speech they are informed about the benefits of conserving their resources and that they have a commitment to take care of their lands.

Well maybe we don't know how to talk sometimes, but we have a conscience and we take care of what we have. (PR, 322-323)

6.3.4. Dialogue of knowledges, attitudes to each other

It is abundantly clear that the creation of the museum involved collaboration between scientists and the community. The involvement of Dr Valiente with the community started more than twenty years ago, when he was a bachelor degree student of the National University. As a young man he was working in the area, long before any thought of a museum.

I started going to the valley of Tehuacán in 1981, that was the first time. I went as an assistant; I was doing my bachelor degree. After that I started to work in Tehuacán doing the flora registry, that was my job and we made several registry lists. (AV, 7-9)

The motivation behind building a relationship with the community was, to begin with, the fact that he was conducting research in their lands. But he saw the poverty in which lived; and when the Reserve was established he saw too that it had failed to consider their plight.

Well certainly what motivated us what the fact that we are carrying out research in their lands. They let us work in their lands and so we had the desire to help and to support them. We did not want to just arrive to their lands and carry out our research without any interaction; we wanted to interact with them, to know about their situation. (LS, 185-189)

The researchers desire to collaborate with them recognizes the fact that it is ultimately the population that is going to be in charge of taking care of the environment. To achieve that, they wanted to give them scientific information about their lands, the faunal and floral diversity and the fossil records.

It is important always to be involved, to ask for permission to work and to pay back in any way the help that the community gives you. We have the idea that we have to share them our findings in the research that we carry out in their lands, so they have scientific knowledge to complement the one they have

traditionally. Even in natural reserves there are always people living there and it is impossible not to interact with them.” (LS, 194-198)

Regarding the creation of the galleries, scientific knowledge was given priority over traditional knowledge. The museographic script, as we have seen in the previous section, did not have any input from the community. Hence, traditional knowledge does not have a representation in the galleries. In all attitudes towards community we find the idea that given their lack of schooling they could have no opinion in terms of gallery content.

Carlos Silva, addresses the subject that community members, due to their lack of education, have often been mistreated by government and Reserve officials and have been relegated from decision-making processes.

I think that people in this community are still being treated like idiots “So you don’t know what you have in the community so why should I explain you? Why should I take my time to tell you what you have if you don’t know?” this kind of mentality. So I think that in those terms we are still very wrong. (CS, 120-124)

He affirms that the approach of the research group was one of respect towards the opinions of the community.

We made the museographic script and we came to tell them, to inform them of our plans, and they liked them so it worked well for both. And as I told you before, the community is very happy to help and be involved and they do take this museum as their own, but in terms of knowledge they do not possess enough to make a museum exhibit. I mean, a scientifically correct museum exhibit. (CS, 115-120)

However, since the subject of the museum is of a scientific nature, decisions of the museographic script were done without their input.

Regarding the information on the panels and the subjects that the museum was going to cover, no the community did not take part. We decided it all without them (...) well at the end of the day they don't have the scientific knowledge to make the panels and the explanations. So it was our job. We did consult them on certain aspects. Asked their opinion about how we had designed the gallery. However, the information, that was our job. (LS, 47-56)

This discourse has also been accepted by community members as justifiable and no opposition was made to the fact that traditional knowledge was left out. As we have seen in the discussion of background literature in earlier chapters, indigenous groups have suffered marginalization and discrimination. Their traditional knowledge is still, in many ways, not recognized as valuable knowledge. This power struggle is deeply engrained in social conducts, and explains the lack of opposition from the community to leave their traditional knowledge out of the museum galleries.

I think it went well, we never had any problems. They came with the ideas of what the experts of the museum had and we said if we liked it. Also, Dr. Vali came to tell us about which type of information he was going to put, the fossils and all that. (AR, 74-76)

Even if the communication process between community members and the team of researchers has not always been an inclusive two-way dialog, the information exchange has increased scientific knowledge in the population. The inclusion of traditional knowledge has taken place in the guided tours, where guides complement scientific facts with the knowledge they already have of their lands. It seems that the community have found a way, through oral communication, to transmit their traditional knowledge to the visitors. It seems that this knowledge has found its place outside of the formal setting of the galleries.

Well they taught us in more scientific ways, they talked to us in more scientific terms. So it helped us to reinforce what we already know. The other knowledge that we have is passed through your grandparents, your parents

and so all that knowledge forms, lets say, the main basis for the guides of ecotourism. And so they gave us more information in scientific or technical terms. (JRB, 78-82)

Both community members and researchers admit that the community has been successful in integrating scientific and traditional knowledge in the tourist walks.

We mix the information when we are giving the walks. Sometimes visitors are more interested in the native uses of the plants and some, like high school or university students want to know more scientific or technical data and then we use the knowledge that we got in the workshops. (JRB, 87-90)

What is interesting is that they complement this information with their knowledge and with what they are. Like the use of plants, which ones they eat and other things that they are telling you while you walk the paths with them. So that is very valuable. (CS, 304-307)

By deciding to transmit this knowledge alongside scientific information, the community have also setting off a process of revalorization of their heritage.

We know how to use the plants, how to prepare them or to eat them, but not much more. And well we know our lands better than an outsider that is for sure. The people from the Reserve and the scientists know many other things, they always come to tell us things, stories we didn't know. (JR121-124)

And well these people know the birds because they have seen them their whole lives, but now instead of telling you, this is the sparrow, or whatever, they tell you the scientific name. And if a visitor comes that is particularly interested in seeing birds they know exactly where to take him. (AV, 191-194)

The knowledge exchange with researchers is extremely important given that the level of education in this community is very low. In terms of illiteracy, the average school attendance of the population of the Reserve is 4.2 years, which is less than

half the total years of the available Mexican primary education (INEGI, 2005). This leaves them with few opportunities for a professional career, making it likely that their only possible of work is in agriculture or is through emigration to the United States.

Because these are very poor people, I don't know what the schooling level is, but it is probably not very high, and there are a lot of people in the United States, (...) So this is a place with a population of kids, women and elderly people and a floating population of men come and go to the United States and sometimes stay here for longer. It's a town with these characteristics. I think that the individual schooling level is very, very low. (AV, 133- 139)

The community of San Juan Raya has very low schooling. This is one of the poorest regions of Mexico. (AV, 105-106)

The fact that the community already knew and appreciated Dr. Valiente helped to build trust, and to increase the participation of the community in the museum and its associated projects They see that he and his team are coming to the community with the honest goal of helping and they trust them. Furthermore, they see scientists as people with expert knowledge and they value this expertise.

We know and we appreciate Dr Vali and what he does for us. He has helped people here, so people like him and we trust that he wants to. Also, well, these people are experts and we, well the majority of the people of San Juan Raya did not finish primary school. Well we don't know many things, we knew less things regarding the fossils and all that stuff from back then. Now we have more knowledge. Still, they are the experts who came to help us, and we trusted them. (JRB, 335 – 341)

Well we have always worked very well with the community. Since the beginning, when we arrived to carry on the first studies in their lands, we have always had good communication. I think they noticed straight away that we were not like government officials, we come here not to take advantage of

them, we don't come here with any other interest than to help them, and that they give us permission in making research in their lands. So they trusted us when we were taking the decisions of the museum. (CS, 109-115)

According to Sugey Martínez, the school teacher of San Juan Raya, the community recognizes the benefits that this knowledge exchange brings them and they receive the researchers with enthusiasm.

All the kids and adults receive with delight the visit of the biologists and other scientists. They receive them with enthusiasm because they know that they bring good things for them, because they know that all that they come to offer are proposals for their development. So they have the support and are very welcome here. (SM, 29-33)

Some of the exchange between the scientists and the community has been carried out through workshops and talks given by researchers from the university, and by Reserve personnel.

I think the museum has done that, because we have had many workshops, from the more basic stuff like first aid, client and tourist services, and also palaeontology, geology and all that, and also we have had conservation workshops. (AR, 375-378)

According to Dr Valiente, people are very interested in the workshops and talks and attendance is very high.

And in those talks people from all sorts come, from elderly to children, many women, all very neat and tidy. (AV, 469-470)

Alvaro Reyes, a community member, states that inhabitants of San Juan Raya are very interested in learning about the geographical, archaeological and paleontological past of their community.

People get really interested in the stories that researchers tell us, for example what Javier is in the process of researching, it is very important when he comes and talks to us about the ravines, that you can see how the mountain changes and that indicated the epochs when this valley was very, very dry, or just dry or with lots of rain and all that. (AR, 432-436)

And that is very interesting for us, when talks like that are given many persons come, even if they are not directly involved in the museum or as guides. When the information is given then people come because it is very interesting to know. And we have to know our past. (AR, 436-439)

During my interviews I realized that people of San Juan Raya embraced the visit of scientists and personnel of the reserve because they were interested in acquiring more knowledge about their resources. San Juan Raya is an isolated community that, up until recently did not even have electricity. The sources of information that arrive to the community are limited and therefore, when scientists offered to give talks about their research they are eager to attend. Furthermore, in economic terms they have realized the value of their resources and are motivated, as I discuss in the last section of this chapter, to continue developing projects.

Many archaeologists have come here to make their research and they have told us that fifteen thousand years ago there were human settlements here, that maybe these people even cohabited with mammoths, because that was more or less the time when they became extinct. They told us that the bones we found in the ravine were probably from mammoths, so these humans could have been cohabiting with them. So, imagine that fifteen thousand years ago there were people living here! (AR, 421-427)

And so we have many ruins, not big and important constructions, but you can find some evidence of settlements, of houses, like clay pieces. Arrowheads, axe pieces made of jade, obsidian arrowheads and all that. On one occasion the researcher took some items to analyze the carbon and told us that it was around fifteen thousand years that people inhabited these lands. That is very

important; to know that many, many years ago people lived here. (AR, 421-432)

Many of the students and research associates of Dr Valiente's team spend long seasons in the field. During these times they rent a house to live in the community or they set up a camping site, depending on the work they need to carry out. In the course of these long visits to the community researchers noticed that people got interested in the work they were carrying out. It was in response to this interest that they decided to start giving some talks to the community on their study subjects.

Many of us spend long seasons here, especially while making thesis' research. (...) people wanted to know more, they asked us to give them talks. Then the time I spent there with Juan Pablo doing his research, I think I was there for fifteen days and almost every evening I'd go and give them a talk. Sometimes we took the projector and the computer and we projected over a white sheet somewhere and we explain some subjects to them. The talk depended on how much time you had to prepare it. (AV, 459- 467)

And the talks we have given in the community have been about our work, because it is what we know about. (CS, 238-239)

Most of these talks refer to the research that these scientists are carrying out in their lands, however they also touch subjects like the biodiversity of the valley as well as its geological history. As it was mentioned before, Dr Valiente considers that it is the scientist's duty to inform people of the community, since the research is being carried out in their lands. Along my interviews I realized this social conscience was shared by other members of their team who showed a deep commitment to collaborate with the community and to pass their knowledge to them.

Yes, especially on the subject of ecology, ecology of arid zones and for example the distribution of some plants and some animals, we have talked to people

about the bats and the importance they have for the dispersion of seeds and pollination of cacti. We have been talking about these issues with them. (CS, 245-248)

Through these constant and varied communication activities the researchers avoid misunderstandings and distrust from the community, encouraging at the same time environmental awareness and heritage valuation. Through access to scientific information, people in the community will have a different perspective of the value of their lands, added to the traditional knowledge that they already possess.

The constant presence of scientists in the community has also made an impact in the younger generations⁶⁷. According to Sugey Martínez, the schoolteacher, this presence of scientists forms part of the children's daily life.

Let me tell you that they see all these issues as part of their lives. It is not like us that would find it strange to see biologists in our village. For them is natural (...) Palaeontology is a normal word for them, if you ask any other kid they would not be able to say it, yet these kids know it perfectly. Because they are used to the word and they have grown with it. (SM, 56-61)

Children in San Juan Raya accompany their parents to their daily activities. They attend workshops, assembly meetings and talks. They also help with work in the fields and shepherding the goats. Children also join their teenager siblings in their work as tourist guides.

As none of the women have someone that helps them taking care of the kids, they take them along to all the workshops, consultancies, talks, so all these words are familiar for them. The word biologist is for them like for us would be a medical doctor, something normal. (SM, 62-65)

⁶⁷ See Figure 2 p. 23 for photographs of the school and children of the community.

Thus, from an early age children are exposed to talks about their environment and the importance of conservation. Moreover, they are used to the presence of scientists in their lands. The scientists that come from outside have become a sort of role model for this children. They get interested by their work and would like to follow similar careers in the future.

If you ask them: What are you going to study when you grow up? And instead of wanting to be a doctor they reply Biology or Palaeontology, for them is totally normal nothing odd about it. And they don't say it because it is a novelty; they say it because they are submerged in their environment and their environment includes that. (SM, 65-69)

Even if the collaboration with scientists for the development of the new museum diminished compared to the first one, there is still a good relationship between them, and the communication channel remains open.

What I want to tell you with this is that we are always in touch with the people from the community, when they have questions or doubts they call me or someone in my team. Sometimes they tell us they have an idea and that they want to discuss it with us. So we have a good communication with them. Although at the beginning it was mostly us that created the museum and they were working with us, now is theirs and they are managing it without us. They are completely autonomous and it is working. (AV, 591-596)

6.3.5. Managing the museum, organization within social institutions of the community

The status of community-ownership of the museum of San Juan Raya influences the way the project is managed. Decisions concerning all communal goods are taken by open vote in the assembly. The museum has been regarded, since its creation, as a communal property; and the community decided that a committee of people in charge of the museum – a management committee - had to be created. The museum committee was then appointed by an open vote in the general

assembly. Years later, as other ecotourism activities were developing, a tourism committee was also created.

Yes, yes, we formed a committee, at the beginning we were only ten people (...) And from those days till now, many years have passed, and, well, every year or maybe two years we form another committee. (PR, 109-112)

And the committees were also created, the committee of the museum. Also before we didn't have tourism committee, and now we have created one. (AR, 99-100)

And from 2004 onwards these initiatives were strengthened with the formation of committees and we just kept on working this way. (JRB, 52-53)

Every year or two a committee in charge of the museum is appointed at the assembly.

There is a committee of around ten people that voted in by the assembly, I'm not completely sure how, but I dare say it is by assembly because everything gets decided in the assembly. They don't make a decision without first asking everybody - because if they do they could have many problems. And people generally want to avoid problems. So a committee is appointed, and I think the term is for two years and then a new one enters; they get organized and they work and then, when their term ends, another person enters. (AV, 441-446)

Every year, every two years, sometimes if a committee is doing well they stay in the post for longer and if not, if people say they don't want the job we have to change it. We make assemblies every two or three months, depending on the issues that we have to attend, if we have urgent matters then every week we can call for assembly for one or two issues to attend. (AR, 103-107)

Normally, you have to be in post for one or two years, but sometimes, for on reason or another, people have to leave and, well, we do understand and it has happened that people have been changed after a small amount of time. (AR, 121- 123)

This system can have several disadvantages given that authorities do not remain in their seats for a long time and so the continuity of projects can be compromised. In San Juan Raya, however, the project has been continuously improving. According to Dr. Valiente this is because all the committees, and all the committee members, are interested in delivering good results.

What has happened in San Juan Raya is that this situation has been stable for a while, there is a committee that changes, but people always want to do the same or better that what the old ones did. There is always the component of trying to keep a good image in front of the others, so this is good, because in the end the project is working well. (AV, 323-326)

According to community member Primitivo Reyes, if the persons that form the committee are not performing a good job they can be removed from their charge by the assembly.

Now we appoint a president and his team and they are the ones who manage the museum for one or two years, as long as they want, and then they ask to be replaced or if the people think that they are not doing well then we change them and appoint another one. (PR, 113-116)

We can begin to conclude: the success of the museum can be attributed to the fact that the project fulfils people's economic needs, that it makes them feel empowered and that the idea was developed, to some extent, with them. Furthermore, the communal system has worked in favour of it. The fact that the museum is seen as a communal property has made the appropriation process very successful: the involvement of the community is rooted in the decision making process itself, as well as in the manifold activities springing from the museum

From the beginning, the whole of the community were asked their opinion and were able to participate. Although, their participation in the museographic script was nil, the community was involved earlier in the process of creation of the museum and all the decisions were consulted upon in the assembly.

Assembly meetings also are beneficial in transmitting news regarding the museum and other tourism activities to community members who are not directly involved.

The smallest children come with their older siblings and because they see that the older ones have earnings as guides they want to join in! The adults don't come much but the committee informs people in the assembly of what's going on in the museum so they don't really need to come. (MH, 148-152)

We can regard the capacity of organization of the people of San Juan Raya, along with their interest in the project, as key factors in the success of the project.

They are very poor but they are very well organized. And, well, there is always going to be some trouble, there are always problems inside the community, but in spite of those problems they are organized and work together and I believe that has been the chief factor here. (AV, 218-221)



Fig 15. (A) A community guide gives a tour in touristic path (B) Minerva Hernández explains some panels of the museum to visitors (C) Alvaro Reyes shows some characteristics of the landscape of San Juan.

6.4. Further indicators of social change

6.4.1. Restoring value to heritage and cultural identity

The environment and their cultural past, which includes all fossil and archaeological pieces, as well as the biodiversity of their lands, is seen now as a patrimony that needs conserving.

Why is the museum important? Well to know that the dinosaurs existed, that the place where you inhabit has many remains of the past, that you are part of something important and that it is not isolated. (SM, 100-102)

So we started to understand all the beauty that exists in this Cactus landscape. (JRB, 47)

The sense of pride and the recognition of the value of their resources have made the people of San Juan Raya guardians of their own territory. Strategies to defend this patrimony are put in place.

people foreign to our community come with their cars and take away some plants and we are fighting to stop that. (PR, 241-242)

We are protecting them from the people that want to take them. Both the cacti and the fossils. (PR, 257-258)

By way of a process of knowledge exchange, which has been at times difficult, community members, Reserve personnel and researchers from the university have managed to create and develop a project that has transformed the vision the community possesses in relation to conservation of their heritage. Participation has been a key element in the process of revalorization.

At the beginning we faced scepticism and other people did not know exactly how to participate. And well, now you are going to see it, people are super involved with the museum. (AV, 117-119)

but you can see that people, in general, participates in the museum, everyone takes part there. So in that sense, you can see that it works. That is a project that really works, that has relevance in the context of having modified their way of life and also has had an important impact in the conservation. I'm completely sure of that. (AV, 223-227)

Through inclusive approaches in the decision-making process of tangible and intangible heritage preservation and exhibition the museum has given a voice to the community members. We can conclude then that in this respect the community museum is acting against discrimination and marginalization of the indigenous people and that it has the potential of being an instrument of empowerment and social and economic wellbeing.

I believe that it has tremendous goodness, first of all, it is a project that is built from the bottom up, it was created with the participation of common citizens and it generates knowledge, it generates a very positive cultural change and the objective of conserving the environment is being achieved. (AV, 605-608)

This inclusive approach has set the museum apart from typical governmental approaches of rural development.

It generates social participation, which is not easily achieved in this country, especially because all the programs have a top-down approach. Then when programs end, when money stops flowing, everything ends, people stop doing things. This could have been the destiny of this museum, to be abandoned by the people. But people here have seen an opportunity in getting involved with the project and I believe that the objective of the conservation of the

environment has been achieved. I think this program has enormous, enormous goodness. (AV, 610-617)

So I think this museum helps people to know the history and the present of the community and its environment. And another importance is that the people that run the museum are from the community itself, I think that is much better than if someone from outside came and built a museum. Since they run the museum, they also recognize and learn of the richness and importance of their lands. (LS, 176-180)

An aspect of the project that can guarantee its continuity is the inclusion of younger generations. As mentioned in a previous section, it is mainly young adults and teenagers that have been involved in being tourist guides. This has given them knowledge about their lands that otherwise, given the feeble possibilities of access to formal education, would not be possible.

We wanted the kids to know what they have because the future of the museum depends on them. (JR, 192- 193)

But the interest on informing our kids is growing now, because they are the ones that are going to be here and they have to know what the museum is about. (JR, 204-206)

And we still have many things to learn but the little we know we tell the new ones and well little by little we are going forward. (JR, 105-106)

The benefits of having the museum in terms of teaching children about their own heritage was mentioned by Sughey Martínez, the schoolteacher of San Juan Raya.

And well we are very lucky here, because we have a museum that exhibits a very important aspect of the locality of San Juan Raya, so kids here do not have to travel to other places to learn about it. They have the museum at their doorstep. And you know, that is very important, because we are in a

community with not easy road access with people that do not have enough money to send their kids in school trips. (SM, 149-154)

The museum has also been regarded as a place that allows them the renewal of their cultural identity. In this sense, the community museum has a vital role in the conservation and communication of contemporary indigenous identity.

I think it is important in terms of the rescue of the culture and identity of our community. We still have a way to go in these terms because we still have to integrate this a bit more, the things we have been exploring mostly are paleontological. We still have to integrate a part of the history, culture of our population. So it is important to have it as a way to conserve the culture of the community. (JRB, 370-375)

So people can give more value to what their have in their community and also we see that the tourists want to know more. I think that it is important because, well being a community so small having a paleontological museum that no one else has, it is not common, at least not around here. So I think it is important also so that all Mexicans can see what life in the past was like here. (MH, 160-164)

This has generated a social transformation in terms of culture that probably touches part of their origins, their roots. (AV, 538-539)

This is of special importance given that the community has faced, as is the case with many indigenous communities, centuries of marginalization and oppression. Through inclusive museological practices, this museum can be then an example of what Simpson (2009: p.124) describes as an indigenous approach “to communicating, teaching, governing and healing”.

To the eyes of the researchers, the role of guardians of their own territory has made community members more involved in the project, more participative and highly motivated to improve it.

6.4.2. Change of gender-related attitudes

In most indigenous societies in Latin America, men and women have different gender roles that are complementary, with no hierarchy of power. (UNPFII⁶⁸, 2010) Traditionally indigenous women and men had equal access to and control of land and natural resources. However, with the disintegration of indigenous societies from outside pressures, globalization, ideological western domination and poor education, women's roles have dramatically changed within their communities. Indigenous women have progressively lost their traditional rights to lands and natural resources and have become politically and economically dependent on men (Hall, 2011).

In the community of San Juan Raya, however, many initiatives that have been taking place around the development of the museum have been led by women. As an example a group of women got organized to secure funding to buy mountain bikes for the tourist trails.

We have a batch of bikes that we have managed to buy with money from a project lead by a group of women of the community and we now give the service of a bike tour. (JR 86-88)

⁶⁸ The United Nations Permanent Forum on Indigenous Issues (UNPFII) is an advisory body to the Economic and Social Council (ECOSOC), with a mandate to discuss indigenous issues related to economic and social development, culture, the environment, education, health and human rights. Available from: <http://www.un.org/en/ecosoc/> (Accessed 10th November 2014)

An important project that women have developed in the community is the creation of an association that makes natural beauty products with natural extracts from plants of the region.

I know that some women of the community have a group to make natural medicines. I know there is a biologist from outside that is helping them. They go to the fields and collect seeds, they make them germinate and grow their plants and from there they extract plant essences to use them like medicines and beauty products. That is the only project I know apart from the museum. (LS, 82-86)

For this project they had the help of a biologist from the University of Puebla who came here doing social service. She has provided training in the creation of beauty products and the women of the community contributed with their ethno-botanical knowledge.

I think that it started with the idea of a biologist that was making her social service here and she was studying all the plants, when she finished she went back to the city of Puebla. But later she came back and she brought a project to propose to us and she taught the women of the community to make a lot of different medicines, like arnica ointment, coughing syrup made with the Agave plant, arnica tincture or oregano tincture, you saw we have a lot of wild oregano here. So that is how the group started. (MH, 92-98)

She comes and gives workshops on how to prepare shampoos, syrups, soaps, creams as well I think. From 2pm to 8pm. She explained them all the procedures, she was the one that created the brand of the products, everything. She was the integrative force. (SM, 42-45)

Women have also been taking part on economic activities outside of their household, for example most of the adult women in the community make handicrafts to sell to visitors and young women are taking part in becoming tourist guides.

For the women that make handicrafts, well before this they were not doing so many things, they knitted with palm leaves but they just did stuff for their homes, or they sold sometimes some "petates" but only for three or two pesos. Right now we have six or seven artisan women that are everyday in the house of handicrafts and there is people that buy their products and the work they do is valued in a better way and paid well. So it has contributed to those families. (JRB, 245-251)

Women have then, been very proactive and engaged in developing several options of sustenance.

My impression is that women are more active in that side and generally women do not speak much with us foreign men, unless their family is present, the husband or someone. They talk more among women. (...) My impression is that women are more involved and devote more energy to these projects, although men also, but women are always planning and plotting stuff. (AV, 540-545)

This active involvement has started to challenge old conceptions. Several statements of people of the community indicate that there has been a change of attitudes towards the traditional role that a woman must have in society.

I think it has been good because like this everyone is putting their part in making projects. Maybe before, many years ago it was the man bringing the food to the house but now is also the woman. We are learning that as well. (JR, 96-98)

The involvement of women of the community in finding, securing and managing resources to continue the projects has given them another role than that of housewife and mother, and men of the community have been supportive of this new role. The following story of Dr Valiente exemplifies these changes.

What I found interesting was that when the women managed to secure the funds to buy the bikes, I arrived to the village and I see all the men with the kids, taking care of them. And so I asked "And now, what happened?" " No well our women are not here and so we are" So, reluctantly they had to take care of their children, they had to be babysitters (...) They said, well the women won those funds so we have to support them to succeed. So these kinds of things I would have never imagined to see. Those kinds of changes imply a change in the "macho" scheme and that is very interesting. I love that story, we laughed a lot because that day we had to go to the fields and Silvano came with us and had to take his little girl with him and he was feeding her and taking care of her and he never, never did that before. I think that is a really good change. (AV, 275-286)

6.4.3. The museum as catalyst for other projects

As discussed before, the presence of the museum has increased tourism flow to the community, which has directly and indirectly brought benefits to the community. One of the impacts, in this sense, that the museum has had both within and outside the community is the influence in generating other similar or related projects. The museum, in its capacity to attract tourism, has been a generator of new activities.

Yes, I think it is because it has the biggest impact to attract people and from it depends that we can have other activities. (JR, 229-230)

*I see that other young people have become interested in the sustainable development issues and through them new projects have been generated. New projects that can help us, because they generate employment, so people can have a well-paid job in the area. So for example we have the project of the traditional medicine or the planting of some useful and important plants, like *Agave marmolata* or *Agave pichomel* so that we can use and make profit from it, but in a sustainable way. (JRB 293-299)*

I know that they get organized for other things. I recently found out that they wanted to develop more the handicraft business and they also want to promote their traditions. So they want to promote the town more now that they have more outreach with their museum. You know the museum is advertised in some flyers from the Reserve. For example in the botanical garden of Zapotitlán I got one of these flyers where the museum and the ecotourism walks are announced. So they have been promoting their museum in the region. (CS, 165-171)

Inhabitants of San Juan Raya have developed new projects related to the museum. The most important of these projects is the creation of the guided tours. The first guided tour was opened after tourist flow increased and currently other five have been implemented.

Then we opened the first guided tour "The turritellas park". The first project was there and we put the fence and we did the suspension bridge and the paths and signs. That was the first guided tour and from there we have been growing, implementing others, the dinosaur tracks, the barrel cactus, the bikes, the horses and that. (AR, 59-63)

This project has grown; an increasing amount of young people has become interested in joining this initiative. Guides are being trained to carry out a professional activity and this training has increased the amount of knowledge that future generations have of their patrimony.

Now the guides have much more knowledge and more people, especially young people in secondary school have become more interested. New guides are learning from the experience of old ones. (JRB, 53-56)

Nowadays we still have young people joining the team and well they ask the old ones and now we also have some books, and I also share my experiences with them. And so if I am here well I share with them and when we I am not

well there are the books and thesis and so they can read about it. This way you can specialize your knowledge. (...) So when you specialize your knowledge well you learn about scientific names and you can inform yourself in the books and other publications we have here. You can become specialized in certain subjects. (JRB, 62-71)

In respect to the guided tours, women of the community secured funding to buy mountain bikes so visitors can make the trails on a bike. Some horses are also available for tours.

For example the women have organized, imagine, they have now formed a NGO or something and recently they have found funds to buy mountain bikes, so the visitor can now make the tours on a bike. So projects like these have been detonated and the detonator is the museum. (AV, 152-155)

Another important project, discussed in the previous section, is the initiative that women of the community have had in creating an association that makes natural medicines with botanical knowledge and resources from the community.

The museum has not only had an influence in developing new projects in San Juan Raya, other neighbouring towns have also started developing similar initiatives. In the town of Tecomavaca a tourist trail has been set up to observe macaws and Santa Ana Telostoc has also built a museum that exhibits pieces of local pottery.

And this town even started to have some influence in other towns, people from other villages started to come here to look at what people had done here. So I think it has had that effect as well and I think that is very interesting. (AV, 295-297)

Yes we did the pathway of the macaws. It turned out really nicely. So the idea arose because we took the authorities of Tecomavaca to see the museum of San Juan Raya and they were very impressed. So then he agreed to do the macaw pathway and so we found ways to do it. (AV, 302-305)

So yes, this project has detonated other ones, there is another museum now in Santa Ana Telostoc. (AV, 327-328)

Finally, initiatives and ideas are still flourishing among people of the community, with the aim of expanding the services that they are offering to tourists. Which is an indicator that the project is regarded as valuable and that the community has an interest in taking it further.

The establishment of a camping area and to open more guided tours, more paths to walk. (JR 257-258)

We want to put a tyrolean crossing, we want to have a better road, maybe buy a vehicle to provide another guided tour. Those are our interests. (AR, 494-496)

Chapter VII

The Community Museum of Frontera Corozal

This chapter has the same structure as the preceding one. Given the extension of the analysis and the different subjects that it touches I divide it in two parts. Two sets of analytical themes arise from the coding processes of the interviews I made with community members of Frontera Corozal and with some external collaborators who possess an extensive social and biological knowledge of the region and that have helped in the setting up of the museum. The first part's mix of commentary and excerpts includes an historical account of the history of the Lacandon Jungle, and finds particular interest in what my interviewees say about the social problematic of the area. This part of my analysis also looks at the interaction of government officials with indigenous and local populations. I continue with an account arising from interviews with community members and external experts of the biodiversity of the area, the economic activities that potentially threaten the jungle and the conservation efforts that have been carried out.

In the second part I will focus on my interviewees' insights about the creation of the museum; the appropriation of the project by the community people; the forms of communication process between locals and experts, and the governance of the museum. Afterwards I will, as in the previous chapter, evaluate the museum in terms of the restoring value to their cultural and natural heritage.

Interviewees

I interviewed nine people in relation to the museum of Frontera Corozal (See Table 5, Page 60). Five of those interviews were with people from the community. Sebastián Arcos (SA) and José Mendez (JM) are farmers and community members that were involved in the creation of the museum from its first days, and both have been president of the museum committee at different times. Lucía Arcos Mayo (LA) and José Antonio Pérez (JP) work in the museum. Lucía is the waitress at the restaurant and José Antonio is in charge of the maintenance of the galleries and garden. Florencio Cruz (FC) is a member of the community that undertook studies

as a biologist in the capital city of the state of Chiapas and that now collaborates occasionally with the museum committee.

The other four interviews were carried out with people from outside of the community, but who have been working there for a long time. Dr. Elena Alvarez (EA), Esteban Martínez (EM) and Alma Delia De los Ríos (AD) are researchers from the National University in Mexico City. They have been conducting biological and land planning research in the area; they were also involved in the creation and development of the museum. Fernanda Figueroa (FF) is a researcher from the National University in Mexico City, He has been conducting research in environmental awareness and environmental education in the area for several years. (For a reference on the description of the professions and roles of each interviewee see Table 5 in the Methodology chapter, page 60)

Table 10. Full list of Interviewees and reference acronyms.

Community members	External collaborators
<ul style="list-style-type: none"> - Sebastián Arcos (SA) - Florencio Cruz (FC) - Lucía Arcos Mayo (LA) - José Antonio Pérez (JP) - José Méndez (JM) 	<ul style="list-style-type: none"> - Elena Alvarez Buylla (EA) - Esteban Martínez (EM) - Alma Delia De los Ríos (AD) - Fernanda Figueroa (FF)

Part 1.

The first part of this analysis focuses on the socio-economic, political and historical background of my case study.

7.1. The Lacandon Region

7.1.1. History of occupation and use of the territory: Government interactions with communities and public policies

The community of Frontera Corozal is located in the Basin of the broad Usumacinta River, which forms the border between Mexico and Guatemala. Frontera Corozal is a riverside town within the Natural Biosphere Reserve Montes Azules, which is located in the southeastern state of Chiapas in the region known as Lacandon Region. The name of this region comes from one of the ethnic groups that inhabit the jungle, the Lacandon. The state of Chiapas has a rich cultural inheritance. It is estimated that almost a third of its population is indigenous and is composed by many different ethnic groups: the Tzotzil, the Tzeltal, the Tojolabal, the Zoque, the Mame, the Ch'ol and the Lacandon (Hernández *et al.*, 1997).

This region is strategically important for Mexico because of its geographical position, and its natural and cultural resources. Its great environmental heterogeneity is expressed in a high degree of biodiversity, with a correspondingly large number of species, communities and ecosystems. The area also provides the communities of the region and the country with a broad array of environmental services: CO₂ capture, the provision and regulation of water resources, biodiversity, soil protection and climate regulation (Figueroa & Bonfil, 2011).

Because of its biological and cultural importance, the Mexican government decided in 1978 to create a natural reserve, The Montes Azules Biosphere Reserve,

(Mendoza, E. and R. Dirzo, 1999). Its total area of 331,200 hectares includes three municipalities: Ocosingo, Las Margaritas and Maravilla Tenejapa. Frontera Corozal belongs to the municipality of Ocosingo.



Fig 16. Map of Mexico showing the position of the community of Frontera Corozal in the state of Chiapas.

Archaeological and anthropological studies indicate that part of the vast territory that the ancient Mayas inhabited includes what is today Montes Azules Biological Reserve. There are archaeological sites from the Mayan civilization dating from the classic Mesoamerican period (250-950 A.D.) within the lands of the Reserve. Most of the sites can be found deep inside the jungle and range from a few pieces to whole cities like Yaxchilán or Bonampak (SEMARNAT-INE, 2000)

Today many ethnic groups descendants from ancient Mayans inhabit the forest. There are 34,000 people of different ethnic backgrounds, including indigenous and *mestizos* (mixed race), living in 60 population centres as well as in several

unauthorized settlements within the Reserve.⁶⁹ This high cultural diversity is also a result of the colonization of the territory by immigration, mostly by farmers without land expelled from the haciendas and ranches from the region of highlands of Chiapas and other parts of the state (Leyva & Ascencio, 1996). During the second half of the 20th Century immigration from other parts of the country as well as other regions of the state accelerated the insert of the Lacandon Region to extensive agriculture and livestock farming as well as timber industry, with the consequent change in land use and the destruction of the jungle. The colonization of the Lacandon Jungle has been a particularly sudden phenomenon given that in less than half a century more than a half a thousand new human settlements arose here (De Vos, 1998). There are also other immigrants from other parts of the country as well as Guatemalan refugees that arrived in the 80s escaping from armed conflict in their country (Figueroa & Bonfil, 2011).

Official documents of the Reserve indicate that it is possible that the Lacandon ethnic group is the only one that has evolved culturally within the area of the jungle. This conception automatically places other ethnic groups as later migrants to the area, giving them less rights as the lawful heirs of the lands within the Reserve (SEMARNAT-INE, 2000). The way of life of the Lacandon is also seen by the government as more in accord with sustainable practices (Figueroa & Bonfil, 2011). Until the 1960s the vast range of the forest, and its difficulty of access, protected the Lacandon Mayan of the many other changes that other indigenous groups suffered. Resulting in the conservation of the traditional methods of use of natural resources, specially adapted to the tropical jungle, for example, they use a method in which in the same piece of land sustains crops, animals and fruit trees at the same time (Nations & Nigh, 1980; Marion 1990; Levy 1998). These two characteristics, firstly that the Lacandon, by being the oldest living group of the inhabitants of the jungle are the official heirs of those lands; and secondly, their traditional methods of agricultural and live-stock farming methods are closer to

⁶⁹ The official statistical data and general information about the Reserve can be found at http://simec.conanp.gob.mx/Info_completa_ext.php?id_direccion=129 (Accessed on 8th May 2012).

sustainability, have given the Lacandon a strong influence in the sociopolitical dynamic of the region (Figueroa & Bonfil, 2011).

Government decisions regarding the communities that inhabit the Reserve have been unequal and laws and regulation have favoured the Lacandon (De Vos, 1998). As an example, we can see the decisions that the Federal Government has made regarding conservation policies in the area, in particular the creation of indigenous settlements outside the core nucleus of The Montes Azules Biosphere Reserve. One of those indigenous settlements created by the government between 1974 and 1976, called “Comunidad Lacandona”, designated 26.4% of the Lacandon jungle to members of the Lacandon, Tzeltal and Ch’ol groups (Vásquez-Sánchez *et al.*, 1992). However, this policy only respected the original lands of the Lacandon people, who could stay in their original lands. The Tzeltal and Ch’ol were given lands away from their original communities, and so were forced to emigrate.

Dr Fernanda Figueroa, who has carried out extensive research in the “Comunidad Lacandona”, describes the conflicts that this decision generated among communities.

Before the Reserve was created the government created the Lacandon communities, around 70 000 ha were given to the Lacandon people, only to 60 heads of family, so it represented a huge territory for each family. This affected many other communities that were living in the area from before. So when these communities, that were dispersed in the vast territory of the Lacandon Jungle, opposed the creation of the Reserve, the government decided to force them to relocate to three population centres outside the core of the Reserve. (FF, 61-67)

According to Esteban Martínez, who also has been working in the area for more than 25 years, this decision of the government was due to their wish to increase their control over the resources of the area.

Then the government decided to concentrate people to have a more rational and concentrated use of resources. (EM, 58-59)

The idea was to create those centres; that way it was much easier to provide them with services, rather than try to provide services to 60 km of irregular settlements. (EM, 109-110)

This decision to give the lands of the Reserve to the Lacandon ethnic group left many others, which had inhabited the area for centuries, landless.

So communities that have been living in the jungle for many, many years but were not from the Lacandon ethnic group became illegal in their own lands - from one day to another. (FF, 71-75)

The decision was taken without any consultation with the local people

It was at that time that the government decided to concentrate people in the villages of Frontera Echeverria and Velasco Suarez. (...) They did not consult them or try to negotiate with them. (EM, 49-53)

Not surprisingly, the Ch'ol people did not agree at the beginning with this arrangement and formed a resistance movement.

The relocation was very badly done, badly organised. These communities continued to resist, and formed the RIC (Indigenous Continental Network), and other resistance movements. (FF, 70-71)

Despite resisting the decision of the government, and after many attempts at negotiation, various communities, such as the Ch'ol lost their lands and were moved from their original territories, thanks to the establishment of the natural Reserve. In the words of José Mendez, a community member and president of the museum during 2010 and 2011.

People came from different parts. For example I came from the municipality of 'Salto de Agua', looking for lands. But many people came from Tila, Sabanilla, Tumbalá, Palenque. They came to settle here outside the Lacandon Jungle. We come from 23 communal lands in the Lacandon Jungle, but after the decree of the Reserve, the government, and the Lacandon people themselves, did not want us to live in their Reserve: they thought that we were going to damage irreparably the resources of the jungle. So after, this 23 communal land people came together and made an assembly to try to make the government change its mind, and to fight for our rights as people from this area. At the end, after many expeditions to Mexico City and the state capital of the state, and after many discussions, we managed to produce this arrangement. (JM, 290-297)

This arrangement meant that although they could not keep their original territories, at least they were not displaced far away. Juan Méndez, a community member and the president of the museum committee at the time of my last visit to Frontera Corozal in 2011, describes this arrangement.

We are still in the zone of Lacandon Jungle but outside of the actual Lacandon lands. Part of the agreement with the authorities was that we would be allowed to stay in these lands, but we should congregate according to our ethnic group. So all the Ch'ól people came here to the bank of the river, at the frontier with Guatemala; the Tzeltal people stayed in Nueva Palestina; and the Lacandon stayed where they were. So that is how we arrived here. That's agreement we had with the authorities. (JM, 297-306)

Sebastián Arcos, a community member, remembers how he was given some territory after the displacement:

The government gave us these lands and we divided them into units, each to be represented by a family. So, upon arrival, a piece of land was bestowed upon each family. This is the land that I have now, where I have my crops and cows. And when I die my sons will have the land that I own now. (SA, 15- 19)

The community then, was formed by people from Ch'ol ethnic groups; but the displaced peoples did not come all from one original community. They came from many different places, deep in the jungle. In short, they were both displaced and re congregated.

If you see closely the community is divided in neighbourhoods and each one corresponds to the original community where they came from. They are all Ch'ol but they came from different communities, which obviously makes it harder for them to integrate. (FF, 89-92)

This new arrangement, as Dr. Fernanda Figueroa points out, has made it difficult for them to integrate. They had to adjust not only to a new environment, but they were forced to build a community with strangers. Nevertheless, they have continued to have a communal system of the property and have now a strong attachment to their territory:

These people do have attachment to the territory. (...) In that sense they do have a very impressive sense of appropriation. (FF, 191-193)

This attachment to their territory and historical patrimony is also caused by a relationship of mistrust with the government and by the history of displacement. They have been removed from their lands once and they are not going to let that happen again. Furthermore, as the government has not recognized them as "rightful heirs" of the Mayan culture they have to affirm themselves as such through other channels.

This policy not only removed these indigenous communities from the environment which they knew in practical terms and which was part of their identity and history; it also worsened the relation that these groups had with the government and created tension even between communities. The Lacandon are seen by the other two displaced ethnic groups as special favorites of the government, raising continuing controversy over who has a right to lands, and who can claim an authentic heritage of the Mayan culture.

Because the government had a preference for them and said they were the ones in charge, the owners of the Lacandon Jungle. They said it belonged to them. (JM, 311-312)

The government likes them very much, they are always protecting them. So they discussed with the authorities and got the lands. (JM, 316-317)

A discussion exists in the three communities as to who has the rights to these pieces, who is the cultural heir of the ancient Mayan that built the pyramids. The Lacandon people say they are the descendants, the Ch'ol say that they are the descendants and not the Lacandon, and so on. All this is related to the question of who has the right to be in these lands. (FF, 144-149)

Dr Elena Alvarez-Buylla, is the head of the Department of Functional Ecology at the National University in Mexico City. She has been studying the genetic diversity, ecology and evolution of plants in the Lacandon jungle for decades. Along her career she has been involved in different projects linking scientific research and progress in society. Among other scientists she founded the Union of Scientists with a Social Conscience (UCCS)⁷⁰.

As explained by her, unfortunate government policies, rather than ameliorating the situation, have reinforced inequalities and tensions in the area.

Different ethnics have been polarized and brought into conflict, here in the Lacandon jungle, with very complicated connections to, the issue of who owns these lands: do they belong to the Ch'ol, the Lacandon, or the Tzeltal? (EA, 183-185)

⁷⁰ For more information refer to footnote 59, page 175.



Fig 17. A view of the mountainous area of the Lacandon rainforest that surrounds the community of Frontera Corozal and constitutes part of the Montes Azules Biosphere Reserve.

The case of the “Comunidad Lacandona”, however, is not isolated. The government in this region has been facing difficult issues of land tenancy even before the declaration of the Reserve. According to official documents of the Reserve there are around 500 settlements probing the government over problems of land tenure. These long-standing problems have been accentuated by the arrival of both national and international companies wishing to exploit the resources of the jungle; by Guatemalan immigrants arriving in the 1980s; by immigrants from other parts of the country; by conflicts between communities; and by the rise of the Zapatista movement in 1994 (SEMARNAT-INE, 2000). The Mexican Government has not developed public policies that have managed to solve these issues. Tension and discontent continue to simmer in the region.

According to Dr. Elena Alvarez-Buylla, this crude manipulation of ethnic groups by the government has resulted in the creation of many vices in the communities

Ethnicity has been exploited by the government. (EA, 77-78)

When describing the communities, she mentions that they show signs of corruption.

They are not even honestly committed with certain principles, but with many vices as a result of this manipulation, of this bad relationship with the government. (EA, 96-98)

If these ethnic tensions form the cultural context to the region, these are made more pressing by the daily pressures of poverty and lack of opportunity. It is to these matters that we now turn.

7.1.2. Current social problems of the area

The great variety in the flora and fauna, and the general wealth of natural resources has not prevented the Lacandon jungle being among the poorest parts of Mexico. The apparent paradox is mainly due to exploitation patterns and economic activities that do not benefit the population (Ceceña & Barreda, 1995). The municipality of Ocosingo, where the community of Frontera Corozal is located, has particularly high rates of poverty. According to the poverty index constructed by the *Consejo Nacional de Evaluación de la Política de Desarrollo Social* (National Council for the Evaluation of Social Development Policies) 90% of its population live in poverty; of this group, 59% live in extreme poverty.⁷¹ The majority of the population subsist in conditions of high economic vulnerability (CONAPO, 2000). It

⁷¹ This percentage is based in poverty indicators used by the governmental agency Consejo Nacional de la Evaluación Política de Desarrollo Social (National Council for the Evaluation of Social Development Policies). Poverty indicators are: educational backwardness, access to health services, access to social security, housing quality, access to housing services and access to food. The results of this census, carried out in 2010 are published at <http://web.coneval.gob.mx/Paginas/principal.aspx>. Accessed on 8th May 2012

is a population largely abandoned by the federal and state government, one very unevenly exposed to national and international development dynamics. The people here experience contradictory institutional policies, and overall suffer from a history of isolation and unjust exploitation (Figueroa & Bonfil, 2011).

The region has a marked history by inequality and marginalization. This unequal situation has generated a highly conflictive context explained by the Zapatista movement (See chapter 5 p. 114). The axes in which numerous actual conflicts are built have to do with the feudalist system which prevailed until the end of 20th century, high social inequality, uneven distribution of lands and the consequent agrarian problems, failed government policies and the decree of natural protected areas, as I discussed previously, among others.

The economic potential of this region stems from its forest. The Reserve's estimates suggest that 95% of the territory of the Comunidad Lacandona is wooded, while always at great risk from farming and extractive practices of local populations. The main economic activities are livestock farming, agriculture for domestic consumption and coffee growing (SEMARNAT-INE, 2000). The management plan of the Reserve elaborates on the deforestation processes, speaking of accelerated processes of change in land use, the expansion of agricultural borders, the loss of traditional farming methods, as well as extensive live stock grazing. It is evident that political and social conflicts impede the kind of institutional activity that might help in the proper management of this region.(INE and SEMARNAP, 2000)

In the case of displaced communities like Frontera Corozal, how resources should be exploited posed a special problem for the newly arrived as well. The new setting brought with it a new environment to learn about and get used to; and new economic activities needed to be developed. The government's response has been to provide welfare programs. According to Vásquez and collaborators (1992), after the relocations, the communities of the Comunidad Lacandona have been highly and directly dependent on government support, generating socio-economical benefits and improving the quality of life. The paternalist attitude of the

government towards these communities makes the region seen as privileged, in comparison to other regions, a region considered demanding in its relations towards government.

A history of chiefdoms and political favouritism and all those practices that the Mexican government, with exclusive attention to the global markets, has established with the local communities and has generated many vices among them. (EA, 70-75)

One of these “vices” that Dr Alvarez Buylla mentions is that they only commit to conservation programs if they bring them a direct economic benefit.

But also there resistance to a more genuine participation; they are always waiting to receive benefits instead of destroying the Lacandon Jungle. (EA 70-75)

According to all external interviewees, this relationship has made the communities develop corruption and has made them dependant on the government

This vision also has roots in the relationship that these communities have had with the State through history. So, based on this relationship with the government, they think: “what do I get if I conserve? They have to give me projects so that I can live on something. (FF 47-50)

So for me this is not solving any problem and the government is just perverting, corrupting the community members. (EM 90-96)

Furthermore, this type of conservation does not fill the precepts of sustainability.

They just are used to the government paying for their stuff. It happens every year we go: they ask for our money to pay for the maintenance of the museum, etc. (...) I sometimes think that all the vices and bad practices we

have in this country and in the world are reflected in this small Ch'ol community (EA 302-306)

According to Dr. Alvarez-Buylla, the government also had a commercial interest in moving the locals from their original lands, and were not honestly committed to conservation efforts.

They gave them the communal right to use big plots of land, always with the vision to manipulate them, to use them in a total corrupted way to have access to the jungle's resources, to make commercial agreements with timber merchants. All of this generates deeply rooted vices; it generates breakages in the traditional communal laws, corruption within the communities. (EA, 89-95)

From a historical perspective, displaced people can have a disruption with their common past. In the case of this community this has led to something of a paradox. On the one hand, the community has forgotten many traditions.

Talking about this Ch'ol community of Frontera Corozal, they have a deep amnesia, break up, disruption with their culture, and this is due to the way that they have been manipulated and broken apart. So they have to rescue themselves and rescue their traditions. (EA, 483-486)

Traditions that are forgotten, also by themselves, due to all this process of recent colonization. (EA, 319-320)

On the other hand, because their lands have been taken from them, and they have been denied their status as lawful descendants of the ancient Mayan, they now have a rather tenacious appropriation of their territory and its archaeological pieces, and are vigilant in protecting them from abuse by strangers.

Dr Figueroa comments that,

To strangers they are very protective of their lands and they do not want anyone taking advantage of the richness they have (...). So they accept that outsiders come and work in their lands only if it benefits them as well. (FF, 248-251)

Since they have had their lands “stolen” from them once before, the community wants to make sure that no outsider is going to come and rob them again or steal their patrimony. On the other hand, we have seen that this region has been characterized by the exploitation and marginalization of its indigenous groups, thus the hardened attitude of the Ch’ol community comes most certainly as a response to a history of abusive relationship with outsiders, private enterprises and government officials – all of whom have been using and taking away their resources without providing fair remuneration or incentive compensation. This attitude from the community extends as well to the scholarly activities of the University researchers.

They did not want to allow carry out research in their lands, unless they benefits, for themselves – and those mostly in terms of economics. (EM, 311-312)

Yet, as we will see, the hostile, yet dependent relation with outside forces has made the development of the museum a mixed success.

In terms of the management of their lands, the community maintains a system of communal land ownership⁷², where each head of family (usually a man) has his own plot of land. This will be inherited by his offspring, normally the eldest son. However, despite this system some families have managed to have accumulate wealth in relation to other, mainly through cattle farming, and there is a social stratification in terms of land and cattle ownership and level of income:

⁷² A similar land ownership as the one in San Juan Raya.

There is a very clear socioeconomic stratification, which shows you one of the contradictions and symptoms of how the macroeconomic structure impacts in the dynamics within the community, and are at the end the causes of the natural destruction. (EA, 171-174)

They have certain communal institutions but also have certain private initiatives that have been establishing agreements, in a very opportunistic way, to separate the Ch'ol into small groups and have more benefits. (EA, 122-124)

For example, there is one family, according to Esteban Martinez that has much more economic power than others:

The Arcos family is very big and powerful and they have always had a lot of influence. Their vision is totally oriented towards livestock farming. (EM, 34-35)

According to Elena Alvarez-Buylla government initiatives explain this inequality. There is no programme to reduce economic differences between the population.

There aren't any governmental programs that promote land planning in the communities; extensive livestock grazing has been promoted as a good option for development, and this has been disastrous for the jungle, causing irreversible damage. It also causes social tensions and generates big socioeconomic differences within communities. This type of livestock farming type is not promoted in a way that can help to homogenize living conditions. (EA, 174-179)

Hernández and collaborators (1997) mention that it is of great importance to find ways to integrate this area of the country with broader Mexican development initiatives. We have seen that Frontera Corozal is characterized by high levels of poverty, low levels of social well-being and an exploitative use of natural resources with consequent environmental degradation, Yet, because of the particular

environment, intergration with the Mexican growth agenda must be in accordance with the communal property of resources and sustainable development

As we saw in chapter four (page 96) one of the alternatives for development in protected areas is ecotourism, given that it provides direct economic compensation for a certain degree of conservation of the environment. Nevertheless these types of activities, it has been argued, do not always promote an equal distribution of resources and their benefits often reach only a certain part of the population (Orlove & Brush, 1996). This is precisely what has happened in Frontera Corozal.

The exploitation of their resources through tourism is very obvious from the first contact with the community. There is a control post at the entry of the village where community members charge visitors an entry fee. Once in the community other touristic initiatives become evident: ecocabins, boat rides to the ruins of Yaxchilán, sale of handcrafts, etc.

There are a lot of conflicts and competition in tourism related activities and there is a social stratification based on the access people have to the economic benefits of this activity. (FF, 26-29)

Alma Delia de los Ríos, an architect with a specialization in geography and land use studies, collaborated alongside the team of Dr Alvarez Buylla in the project of the museum. She worked, for many years, closely with community members and according to her,

I find the community is very divided There are several groupings of people here who are dedicated to tourism, for example, the vans, the hotels, where Alianza and Escudo Jaguar are the stronger. But even within them the groupings there are divisions, so there is no project with a community vision. (AD, 200-203)

According to Elena Alvarez-Buylla, this entire disharmony is owing to a lack of vision from the government. There has been a lack of accurate planning and careful execution of public policies by the government.

And, well, the participation of the government is even worse; they create projects without any previous research. They make some ecotourism initiatives without any background research on the effect and impact of their actions; in the end this promotes disruption and corruption of local institutions. (EA 448-452)

In this section I have explored how the socio economic problems in the region are related to a very complex history interactions between government policy and local groups; and I have suggested that these problems have not in any way been compensate by clear inclusive policies that provide sustainable economic activity within the constraints of the Reserve

I will now consider the importance of this region in biological terms, the environmental impact that development policies are having, and the policies of conservation in a protected natural area.

7.2. Conservation

7.2.1. Biodiversity of the Lacandon Jungle

The Lacandon Region has the highest index of biodiversity in the country and given that Mexico is considered as one of the most biodiverse countries in the world, this region's significance in the general struggle to conserve tropical jungles is clear.

Here are the facts. In terms of species number, 90% of the invertebrates associated with the Mexican tropical rainforests are found in the Reserve. Approximately 70 of these invertebrate species are native to the to the area. The region is home to 77 species of reptiles and amphibians, which represent 8% of the species found in

Mexico. Of the 341 species of birds (González, 1992 and 1993), 28 are endangered: these include the scarlet macaw *Ara macao* and the red-lored parrot *Amazona farinosa* (Bond, 1992).

Medellín (1992 and 1994) reports that all orders of terrestrial mammals are present in the 112 species that inhabit the Reserve. By species number, this represents 24.8% of the mammals of Mexico. In terms of mammal species, it is the country's most diverse area. As for the plants, a total of 3,400 different species are to be found in the Lacandon Jungle (Martínez *et al.*, 1994).

The Biosphere Reserve of Montes Azules includes several different ecosystems: evergreen and deciduous forest, pine-oak forest, riparian gallery forest and savannah (SEMARNAT-INE, 2000). However the destruction of the jungle in the last 45 years has been enormous. Between 1954 and 2000 more than 30% of the conserved ecosystems of the region were compromised, mostly due to the action of livestock farming and grazing, agriculture, the timber industry. Blame must be extended also to the implementation of government and state policies discordant with the social and environmental realities of the area (Figueroa & Bonfil, 2011).

In the 1970s the government began to show concern for the conservation of the Lacandon jungle. The establishment of the Reserve of Montes Azules came specifically as the Mexican government's response to the *Man and the Biosphere Program* instituted by UNESCO launched in 1971 (SEMARNAT-INE, 2000). The Trust for the Lacandon Jungle was created in 1976: its main objective was to draw up the guidelines to be followed in the creation of the Montes Azules Reserve. The full decree was published on the 12th of January of 1978.

At both national and international levels, the Lacandon Region has become a well-known centre for conservation priorities. Numerous actors, including government institutions, NGOs and different branches of the scientific community, all began to assert a strong presence in the area, influencing the life of the local people.

Florencio Cruz is a community member that left Frontera Corozal to study biology at the state university. He later returned to his community and now collaborates with and advises the museum committee on how to improve its management.

The Lacandon jungle is very important because it has high biodiversity. Well that's the case for all tropical zones, but the Lacandon jungle has plant and animal species just not found in other tropical jungles, there's a high percentage of native species here. This jungle has very big potential: it's a resource that we have to conserve, that we have to use responsibly. (FC, 192-196)

The plant diversity is not noted for a high number of native species. However, if numbers of such species are low, there is some native species that is hugely important in conservation circles, and to our story of the museum of Frontera Corozal. *Lacandonia schismatica*, one of the two surviving species of the genus *Lacandoniaceae*. It is restricted literally to 1 ha in the lands of the community of Frontera Corozal, in the edge of the mountain range Sierra Cojolita.

Lacandonia schismatica (See Fig 18A), described in 1989 by Esteban Martínez and Clara Hilda Ramos is a parasitic plant of that lacks chlorophyll and takes all its nutrients from fungi. It is therefore transparent white and grows only a couple of centimetres from the soil. The most unusual characteristic of this plant is that it has the reproductive structures inverted, with the stamens in a central position surrounded by the pistils (Martínez & Ramos, 1989). This characteristic is believed to be unique among angiosperms.



Fig 18. (A) A specimen of *Lacandonia schismatica* in the communal reserve of Frontera Corozal. (B) Esteban Martínez examining specimens of *Lacandonia schismatica* in Frontera Corozal. (C) Museum panel describing *Lacandonia schismatica*.

This plant grows in dense and shady sites within the rainforest. I visited the two populations of *Lacandonia schismatica* along Esteban Martínez (Fig 18B) during my first visit to the community. These are lands reserved for conservation and they are not in the tourist trail. However, the agricultural frontier keeps advancing around these conserved areas putting this plant in danger of extinction.

The rarity of this species constitutes one of the most important arguments towards the necessity of protection of this area. The presence of this species has been the triggering factor in the collaboration between scientists and community members of Frontera Corozal, as we can see in the following quotes of Dr Alvarez Buylla.

*The work in the community of Frontera Corozal Chiapas was initially motivated due to the fact that there is this flower very close to the community; it's very particular, *Lacandonia schismatica*, a species that we have been studying. (EA, 16-18)*

*There are Ch'ol, Lacandon and Tzeltal round here, and we decided to work with the Ch'ol because they are the ones who had control of the lands where *Lacandonia schismatica* can be found. (EA, 107-109)*

Aside from the specific and spectacular case of *Lacandonia schismatica*, the Lacandon represents an area of high interest to ecological science. The area is seen as fruitful for research because of the fragility of its ecological relations, especially those involving rare or endangered species. These scientists come to Frontera Corozal because the region exemplifies the kind of urgent and complex problems ecologists must try to understand if they are to find solutions to poverty and habitat degradation.

However, in recognition of the relationship between poverty, lack of opportunities and environment degradation, these scientists decided to get involved with the community to develop sustainable alternatives for development.

*And one of our interests was to promote community activities that allowed sustainable actions to generate options so that they were able to conserve the area where *Lacandonia schismatica* is growing. (EA, 30-32)*

During my interviews with Dr Alvarez-Buylla it was evident that she had a real commitment to help the community to improve living conditions, with sustainable development projects.

All of this was as part of the belief that these people should have a more dignified life and a more equal distribution of the benefits of environmental services. (EA, 39- 40)

Talking about the importance of *Lacandonia schismatica*, local biologist Florencio Cruz comments that,

It is important because although it doesn't have any economic value, it is valuable for the scientific world. It is a very rare species that is only found in the Lacandon Jungle and that makes it important in terms of recognition and conservation. (FC, 65-68)

For Esteban Martinez, who discovered *Lacandonia schismatica*, the rarity of the plant was an incentive to explore more fully the biodiversity of the region – which would not be an easy place to access or work in, given the social and economic tensions we discussed in earlier sections of this chapter.

I think that there is still a lot of science to be done round here. I saw this as an opportunity to complete the puzzle of the biological diversity of the area. (EM, 269-271)

However, working in the lands of this community meant working alongside them, gaining their trust and helping them to conserve their territory.

I saw it here opportunity to increase the biodiversity knowledge of a region that was inaccessible, both due to the poor roads, but also due to the difficulties that working with the Ch'ol community represent. (EM, 292-294)

The recognition of the scientific importance of a region in terms of possible new species, including native ones, and their ecological interactions, is a decisive factor in the efforts to conserve an area. Such scientific recognition can prompt broader understanding of the need to conserve the plants, animals, ecological interactions and ecosystem services of an area (Hannigan, 1995). Thus, one of the reasons researchers engaged with the community was to tackle a lack of knowledge of the biological diversity of the area, and to suggest to the community that they should demonstrate to the world the value of their natural resources.

Meanwhile we had started to build a census of flora and fauna of the area, to show its value, and also to get a sense of how much unknown diversity there might be the area where Lacandonia is growing. Because of the peculiar characteristic of the soils, and some other characteristics - and Esteban Martinez just knowing a lot about this place! - we had the hypothesis that it could be a zone of very high endemism. (EA, 191-195)

The importance of the area inhabited by the Ch'ol is not only in terms of biodiversity. It is significant also for its location that connects many small Reserves, the Reserve of Montes Azules with the greater Mayan Jungle of Mexico and Guatemala. In terms of broader conservation policy in Mexico it has strategic importance.

Well their lands are exactly situated as a place – as a possible biological corridor - between the Sierra Cojolita and the Mayan Jungle of Mexico and Guatemala. The lands also connect the various small Reserves that have been created around this Ch'ol community of Frontera Corozal. (EA, 138-142)

To this team of scientists, their work researching the biodiversity of this region brought very good results: 25 new species were found in an initial census of the area.

We had the surprise of finding 25 new species, and we didn't even make an exhaustive census. 25 new species in one year and a half of census! This is very alarming because it shows how much we don't know about these jungles. (EA, 217-220)

In one sense, the creation of the museum, is a response to the significance the scientists attached to their newly knowledge. The fresh insight into the region's astonishing biodiversity boosted the appreciation already felt for the natural resources of the region.

Florencio Cruz, community member and biologist, thinks that the museum should reflect the diversity of the jungle, mainly with the interest of showing the visitors the importance and the richness of the area. It is evident that there is a sense of pride in the diversity that their lands present.

In the museum we have to represent the different types of ecosystems we have, because that is exactly what we find in our jungle. We can find different types of vegetation, rainforest, middle forest, some zones of riparian vegetation, and some bamboos. So it is important to exhibit all that in a museum, and not only the flora but also the fauna, and the different rivers and basins, (...) so that the people can see the immense richness we have here in the Lacandon Jungle.”
(FC, 92-93)

Alma Delia de los Ríos, also comments the importance of the museum in showing the visitors the richness of the jungle.

In this case is the Lacandon Jungle, which is rich in every sense, cultural, environmental, in terms of landscape. So this project is like a window that allows visitors to see a piece of what is in this great region. So this museum is a small taste of what there is in the jungle. (AD, 137-140)

According to management plan published by the Reserve one of the main problems for conservation in the region is that the majority of inhabitants of the Reserve do not have the means or the necessary knowledge to develop alternative and sustainable forms of economic activity. The management plan of the Reserve speaks also of “*an alarming process of cultural impoverishment and loss of traditional knowledge of natural resources*” (INE and SEMARNAP, 2000: p.45).

In this sense, great significance – and hope – can be attached to a museum that functions as a ‘communication project’ that highlights the importance of the biodiversity of the area, helps the local people not only gain knowledge of their region, but leads to their reaffirmation of the kind of traditional knowledge that has often been said to be a significant aid in the conservation of the environment.

In this sense, this museum fulfils the definition that Davis (2007: p. 199) gives to an ecomuseum: “ *a community-led heritage or museum project that supports sustainable development*”.

7.2.2. Conservation and development in a protected area

As we have seen in chapter three, a conventional conservation strategy is to create natural reserves in which human activities are limited, so as to prevent environmental degradation. These strategies often affect local communities, imposing restrictions on their way of life. Such changes include activities such as hunting bans, the loss of livestock to newly-conserved predators, and changes to farming practices. Particularly significant, of course, is the loss of traditional or original lands (Tisdell, 1991).

From this it follows that it is likely that affected people will be resistant to ideas about the conservation of the environment and will tend to subvert or ignore the conservation strategies developed by Reserve personnel (Tisdell, 1991). He affirms that “*residents near national park suffering damages from marauding animals or losing traditional rights in areas set aside for park cannot be expected to be sympathetic to conservation of wildlife*” (Tisdell, 1991: p.78)

Direct compensation for the ‘losses’ accrued by conservation strategies must be found. Moreover, this compensation must not only be punctual economic help but must translate into long lasting benefits, i.e. access to services, education, increased opportunities for employment, etc.

In this community, as we see in the following quotes, there are indeed some people reluctant to participate in conservation efforts:

Some people are interested, they do follow and they sometimes make meetings when they tell other people to stop cutting down trees. Some people listen, and some do not. (LA, 165-167)

Yes, people from CONANP and PROFEPA⁷³ come here, and we all gather in the auditorium, and they tell us what we can and cannot do, things like cutting trees and burning the forest. (JP 175-177)

It is evident here that personnel from the Reserve do not engage in a dialogue with communities and only inform them of laws and regulations. Furthermore, during my interviews there was no sign that personnel from the Reserve were developing programs to offer alternative means of support within precepts of sustainability.

but some people go to these meetings and then just carry on doing what they are not supposed to. They sometimes don't even listen to the CONANP and PROFEPA. People are still burning the forest. (JP 177-179)

As Tisdell, (1991) states one thing is to pass regulations to conserve and another to ensure that these are being respected. In developing countries, given the presence of poverty and corruption, the lack of enforcement of conservation guidelines is a persistent issue (Bass *et al.*, 2005)

Esteban Martínez mentioned that Frontera Corozal has both people interested in conservation and people only interested in the short-term benefits that certain economic practices, that are not in line with sustainable development, bring them.

⁷³ The acronym CONANP stands for *Comisión Nacional de Áreas Naturales Protegidas* (National Commission for Protected Natural Areas), which is the governmental office that is in charge of the management of Reserves and protected areas. PROFEPA stands for *Procuraduría Federal de Protección al Ambiente* (Federal Attorney for Environmental Protection) which is in charge of ensuring of compliance with environmental laws.

There are some people who are very willing to collaborate in conservation efforts, and there are also people who are reluctant to accept conservation efforts. Their vision is totally short term: they think that livestock farming really is the only option (EM, 26-29)

When asked about the importance of conservation, the community members that were interviewed mention the importance of keeping the forest in good state for the sake of tourism attendance, but they also mention the importance of keeping resources for them and coming generations, as we can see in the following excerpts of my conversation with Lucía Arcos, one of the waitresses of the restaurant of the museum.

Well, when people from outside come they like it when it is nice and beautiful and fresh. (LA, 153-155)

Well I think it is better that people don't destroy the jungle and cut down the trees we have, because we live in a beautiful place and if we destroy everything, what are we going to have left? Our children will have to move away because there will be nothing left here. (LA, 158-160)

People of Frontera Corozal also mention the importance of environmental services⁷⁴ and a close direct dependence on natural resources is evident in their responses. The following quotes serve as example.

Well because we live here. We feed ourselves from the things we plant and the animals we keep, but also we need to live in a clean place, that has no rubbish and has a river with clean water. And for tourism it is better as well. (SA, 213-215)

⁷⁴ An environmental service is a concept emerging from the ecological economics literature and has been defined as any functional trait of a natural ecosystem that is beneficial to humans (Cohen & Robbins, 2011). Examples of environmental services can be water purification, CO2 capture, soil formation, etc.

It is important because when we don't have, mm I can't find the word... well, it is not good when we don't have many trees and all that, because we have more flooding and the soil gets used more. When we have the hills with forests everything and everyone is happy. That is why it is important to conserve. (SA 220- 224)

As we have seen in earlier sections of this chapter, the community has had a complex relationship with government officials, from the displacement to the imposition of rules and regulations in their new lands.

This has also been identified by Dr Fernanda Figueroa, who has been working with communities of the area, she states that there are contradictions to be found in the villagers discourse as a result from the way conservation strategies have been imposed by the government.

On the one hand they say "this is our jungle"; and they can tell you why it is important and all the resources they have from it, all mixed up with external discourses that they have incorporated, like the climate change and oxygen production and things like that. But on the other side they also see the Reserve as a limitation imposed by people from the government agencies. (FF, 43-47)

This ambivalent discourse reflects a reality. While the creation of the Reserve has limited their traditional economical activities, the concept of the conservation of biological diversity has nevertheless provided them with development opportunities, mostly in terms of ecotourism.

In their daily lives there is an imposition and it limits them economically: but at the same time there are opportunities. (FF, 51-52)

Talking about their perceptions of conservation, well, there is a lot of variety but it has all to do with the economic opportunities that it represents for

them, but still it is seen as a limitation for their overall economy, because the majority still have their lands and their livestock. (FF, 30-33)

Biologist Esteban Martinez believes there are grounds for pessimism. He finds the villagers' commitment to conservation is inauthentic. For Martinez, they only take care of the environment in so far as this gives them direct economic benefit.

only for some people the conservationist flag is legitimate. (EM, 162)

My vision is that they are opportunists and they are not really committed to the cause. (EM, 166-167)

Sensing a lack of a commitment to conservation activities, and hugely aware of the importance of the area in scientific and environmental terms, the external scientists felt beholden to get the community involved in sustainable projects.

During my conversations with the scientists I identify not only a deep commitment to helping the people of Frontera Corozal, but an understanding of the problematic of these communities. They understood the need to anchor these projects deep in the traditional organization of the community, if they were to guarantee participation.

We wanted to see if we could collaborate with the community to generate some initiatives anchored deeply in their own institutions and organizational forms of governance. (EA, 59-61)

Drawing from these conversations and from my personal experience as a field biologist in Mexico I can affirm that sensibility towards impoverished communities is almost inevitable when research involves spending time in the field working alongside people from these communities. As mentioned earlier in this research, Mexico is a highly diverse and rich country, but it presents deep inequalities and poverty. As it is evidenced by the existence of organizations such as the Union of Scientists with a Social Conscience (see footnote 48 p.160) many scientists in the

country feel the need to use their professional skills to alleviate poverty and improve the living conditions of marginalized groups in the country.

The scientists decided they would like to establish a project that embodied, and facilitated community-based conservation. They hoped it would be sustainable:

Anchored in their own use of resources, their own knowledge and appreciation of natural resources. The project would also stand for a more equal distribution of the benefits of the use of these resources and environmental services. And the project would have the vision that nature should not be privatized – that the moment nature becomes privatised, it becomes merchandise immediately.” (EA, 59-66)

So we are working here, not only for academic interest, but for the recognition by the international community of the importance of this zone. (EA, 273-274)

The collaboration was, as we will discuss in the next section, very difficult for both groups of people. Nevertheless, progress was achieved. One significant step was the declaration of a communal Reserve to protect *Lacandonia schismatica*.

Unlike Martinez, Fernanda Figueroa believes that actions like these are evidence of an authentic effort by the community to conserve the jungle.

But I think the fact that the community has set some lands apart to keep them intact, and have declared a Reserve, is evidence that the conservation discourse within the community is real somehow. It was a communal initiative to set up this Reserve. (FF, 254- 257)

In opposition of what Dr Fernanda Figueroa thinks, Esteban Martínez argues that they only are conserving these lands because they cannot use them for other purposes. And he makes a further argument that the conservation discourse is not genuine, either for the authorities or the inhabitants of Frontera Corozal.

We are calling these lands Reserves but in reality they are composed not only of virgin lands: they have a degree of degradation. To my view these are lands that are of no use for them, in terms of agriculture and cattle farming, because they are terrains full of rock. So they saw these are areas with no potential for exploitation. That is why they kept them untouched. (EM, 183-187)

To my mind the villagers have a very primitive mentality: they burn the forest, they have one or two years of agricultural activity, and after they use the land to raise cattle. So I think that in the case of the Ch'ol, their concern with conservation is only part of the discourse. That's what they tell outsiders, it is not really an interest for them. Most of the people of the community do not see how conservation of their lands can be of any benefit for them." (EM, 188-193)

As discussed in chapter four, poverty represents a considerable challenge for conservation. It is a determining factor on the interest on conservation is the level of poverty that the community has. A population that is struggling to make a living is less likely to consider on the long-term impact of its actions in regards to the environment. Furthermore, a population that has been affected by conservation regulations is less likely to sympathize with conservation ideals (Tisdell, 1991). This seems to be the case of the people of Frontera Corozal.

As an example of these contradictions, and as possible affirmation of the arguments of Esteban Martinez, it is worth noting the villagers' attitude towards a new proposal to reforest some areas surrounding the Communal Reserve.

So what we wanted, and what we proposed to the community members was that we reforest the areas that surround this land and that are currently used as stock grazing fields – all this to make a corridor between the jungles where Lacandonia is, and the Sierra Cojolita. (EA, 160-163)

Dr Alvarez Buylla's team proposed to expand the communal reserve and reforest some areas that have been used as grazing areas for cattle, but the community refused.

But it was very difficult to achieve, we started to get aggressive behaviour from several of the community members. (EA, 163-164)

These lands were in heavy use by the community. They were not willing to collaborate in their conservation, even if it was important for the creation of a biological corridor connecting the Communal Reserve with other parts of the conserved jungle, a corridor that might prevent a highly endangered plant from complete extinction

Elena Alvarez-Buylla admits that the Communal Reserve was easier to set up with the community because it is a mountainous area and therefore less suitable for cattle farming or agriculture. Yet conserving bigger areas has been impossible.

So to come up with an agreement for land planning, to be able to conserve it and to make it connect with the Reserve of Montes Azules was very complicated, we have not been able to do it and it is something we are still working on. (EA, 186-188)

Esteban Martinez, who has been working with this community for more than two decades, and who has developed some scepticism about the possibility of progress, believes community-led conservation is seriously compromised by the attitude of the community, which he considers too utilitarian.

That's the story here, that's where we're heading, and it is going to be like that until only a few remaining spots of rainforest are left. The whole thing of a Communal Reserve is for me, a farce. (EM, 176-178)

Esteban Martinez's attitude towards the success of the project seems very pessimistic, however, during our conversation he acknowledged that with

education and awareness things could change and that is the reason why he is collaborating with Dr Alvarez-Buylla in this project.

It all depends on the community, it depends on their education level and the interest of the people. (EM, 172 -173)

According to the scientists, if the jungle is to be conserved, a far greater effort will be needed from the authorities and academic institutions. In terms of the collaboration of scientists and scientific institutions with rural communities, it is clear that the institutions and not just the individuals have a role in helping these conservation projects grow⁷⁵. Dr Elena Alvarez makes here a critique to the way scientific knowledge is not always being directed towards progress of the population but towards commercial interests.

I think that the University should have a much more proactive capacity via these kinds of project. There is a tendency for scientific knowledge to be directed more at big companies and enterprises than at civil society and its environmental needs. (EA, 440-444)

The fact that this community has been recently relocated to a different environment produces another set of problems. Alma Delia de los Ríos, a researcher from the team of Dr Alvarez Buylla, believes that the community has been scarred by *“landscape fragmentation”* (AD, 13), and by its loss of roots. Dr Fernanda Figueroa, who is familiar with the problematic of the area through her research confirms this and argues that people from Frontera Corozal suffer from lack of *“a sense of place”* given that *“their historical process does not give much space to patrimony issues.”* (FF, 40)

The villagers of Frontera Corozal are in an environment different from their traditional home. They have been presented with lands abundant in resources – but resources that demand different actions from those the community is used to.

⁷⁵ For examples of good practices in community-based conservation involving community members and governmental institutions refer to page 96 of this text.

The community used to inhabit mountainous lands in the jungle and were relocated to lowlands that present different flora and fauna and have a distinct climate. Academics recognized these difficulties that the community had faced and wanted to help them build 'new knowledge' about their environment in order to help them find ways to conserve it, and live economically-active lives.

According to Dr Alvarez-Buylla researchers also had the desire to:

Collaborate with them in this re-evaluation of the resources and this mutual awareness of the importance of these resources to conserve, not only Lacandonia, but also other species. (EA, 133-134)

7.2.3. Economic activities and their impact in the destruction of the jungle

The loss of forest with its associated complete change of land use, and the high level of degradation of the remaining forests, is an extensive phenomenon in Mexico. Deforestation contributes to climate change, and entails also grave consequences in terms of loss of biodiversity, soil degradation and reduction of supply of ecosystem services, from which our wellbeing depends. It also affects the integrity of the natural resources available for sustainable national development, and impacts on the quality of life, and on the future well being of many rural communities in Mexico (Figueroa & Bonfil, 2011)

The community of Frontera Corozal is highly socially and economically stratified and this brings tensions and inequalities in terms of access to resources. This in turn hinders the impact of conservation strategies and has made it harder to establish inclusive sustainable policies, such as initiatives of community-based conservation, which have been proven to work in many other parts of the developing world (Western *et al.*, 1994; Orlove & Brush, 1996; Kaus, 1993; Hill & Press, 1994)

In chapter four I discuss that in the developing world, progress needs to address not only economic growth, but also an equal distribution of wealth. The reduction of inequalities and socioeconomic stratification in society is a pre-requisite to sustainability (page 93). Dr Alvarez-Buylla recognizes this in the community of Frontera Corozal,

There is a very clear socioeconomic stratification, which is a symptom of the contradictory macroeconomic structure; and it impacts on intra-communal dynamics, and becomes in the end a cause of the natural destruction. (EA, 159-162)

In regards to the conservation of *Lacandonia schismatica* specifically, Dr Alvarez-Buylla explains that unfortunately this species inhabits lands that are very close to powerful cattle-owners of the community who do not share the researchers' conservation ideals and want to actively impede their presence in the community.

And well the lands of most of the powerful people of the community are very close to the place where this species lives; and we even had some threats from some of these people, that, well, they are a bit like the chiefs of the community, they have a lot of land and a lot of cattle. (EA, 166-170)

The main activities in the community are agriculture, stockbreeding and ecotourism. The first two put direct pressure on the resources of the jungle: without a sustainable plan, these activities compete directly for the resources, such as space and water, cycled within the natural ecosystem. People in this community draw from, and survive on, these natural resources. Unless other activities are developed, they will continue to destroy the jungle.

However, we have to think that when you live directly from the natural resources you have to adapt to circumstances, so if its necessary for their survival that they destroy the forest they will do it. That is how I see it. (FF, 257-259)

As I have described, the government relocated these communities to population centres in the buffer zone of the Montes Azules Reserve in the belief that the provision of services would be easier, and the pressure on the environment would reduce. In low and middle-income countries there has been a population drift from rural areas to concentrated population centres. Tisdell (1991) argues that this does not necessarily mean that environmental pressures on natural areas will be reduced as larger population centres may encourage commercial agriculture and extensive livestock raising.

According to Elena Alvarez-Buylla,

These communities are a reflection, a symptom of the macro situation, not just in Mexico, but across the whole world, that is making an impact on the conservation of natural resources. (EA, 201-203)

One solution to this difficulty is to articulate and encourage sustainable practices in the population centres. In the case of Frontera Corozal, this initiative has not yet been made by the Mexican government. The government has instead created a contradiction: on one hand they relocate the communities of the core zone of Montes Azules Reserve in order to conserve them, but on the other hand they do not promote sustainable economic practices in the new population centres, located in the buffer zone, which would allow the conservation of the communities' lands.

As population rises and no sustainable options are implemented, then obviously the pressure of the population on the resources is tremendous. (EM, 123-124)

Furthermore, the government even encouraged the displaced population to practice extensive livestock farming as an economic activity – something highly damaging for the environment.

There aren't any government programs promoting land planning in the communities. Extensive livestock grazing has been encouraged, as a good

route for development and this has been disastrous for the jungle, causing irreversible damage. And it also is a social tension within the communities, generating big socioeconomic differences free of any regulation, because this livestock farming type is not promoted in a way that can help to homogenize living conditions. (EA, 163-178)

Prohibition without alternatives often leads to conflicts and tensions, especially in impoverished areas. Therefore in order to stop the degradation of the environment the causes and not the consequences need to be addressed.

I think also, that the causes of deforestation in the region have not been addressed. The issue here is to make people able to conserve, to make sure that they have other economical opportunities, which will keep them from deforesting their lands. And I think ecotourism can only solve this partially. (FF, 259-262)

Here, Dr Fernanda Figueroa raises an interesting point by saying that it is a mistake to generalize the population of Frontera Corozal.

We have also to remember that communities are not a block of homogeneous people, so some are interested in conservation, others are not and others say they are but have other interests in reality. It's like everywhere else in the world, people are different. Some people are more powerful than others." (FF, 263-266)

The restoration of traditional methods of agriculture and livestock production could yield sustainable alternatives. Some ethnological studies, such as those of Gómez-Pompa (1985), mention the important cultural legacy conserved by some of the ethnic groups of the state of Chiapas, through their traditional use of natural resources. It is therefore of great importance to revalue the indigenous knowledge in regards to the use and management of plant and animal resources.

We cannot tell the people not to touch the jungle resources because we live on them; ever since our ancestors, they lived on the collection of fruits and the hunting of animals, but they knew how to do it right. So we have to follow their example, we have to value our resources, we have to use them responsibly, so that we don't drive them to extinction. (FC, 196-200)

According to Florencio Cruz, the community has now abandoned many of its destructive practices of the past.

In the past many people, it's not that we were predators, but we needed to open up spaces to cultivate the land. But for the past six years, talking specifically about the Ch'ol people of the community of Frontera Corozal, I can see that people are more aware of it, in comparison to when we arrived here. (FC, 205-208)

He recognizes that a contributing factor to the increase of conservation of their natural resources is the existence of alternative ways of support.

But now the diversity of activities we have has helped us to conserve the jungle, many people engage in tourist activities, the sowing and commercialization of chate, and in other activities that are not aggressive with our resources. So the diversity of economic activities we have in Frontera Corozal has helped to buffer the accelerated use of the natural resources. (FC, 209-214)

7.2.4. The museum as economic force

Contrary to what I expected, all interviewees agreed that the museum has not had a direct impact in the community in terms of improving their life conditions nor has it been a generator of new projects in the community or in nearby towns. This is particularly paradoxical because the museum was a community proposal in the first place and it has secured funding from many places.

No, it hasn't had an economic value. We haven't had any profits from the museum that allowed us to do other things. The museum has only been a space that is sustained by the profits of the restaurant, to pay for the maintenance of the green areas and the building, the salary of the restaurant staff, etc. (FC, 295- 298)

This lack of force in creating new projects can be explained in terms of the paternalist relationship that this community has had with the government.

Lack of initiative is also present in this community, most likely as another consequence of paternalist policies from the federal and state government in this region. They have secured some funding, for example, for the maintenance of the restaurant. But as far as I know they have not generated another project directly involved with the museum. (EA, 415-417)

One of the only impacts that the museum has had in the community is that it attracts tourism and therefore has helped to sustain a diversity of economic activities, which has contributed to an improvement on the conservation of the area.

So the diversity of economic activities we have in Frontera Corozal has helped to buffer the accelerated use of the natural resources. (FC, 197-198)

In an economical sense, the presence of the museum has increased tourism flow, which indirectly has brought benefits to the community.

However, in a way the museum has brought some economic benefit, because it makes tourists stopping here and visiting our territory and they like the museum and they eat at the restaurant. So even if the museum does not bring any money to the community itself it does help with the economy of the community. (FC, 295-302)

The museum is getting bigger and also in the community there are more things for the tourists, like the eco-hotel, more people sell their handcrafts as well. (JP 87-89)

Nonetheless, for the few people that work in the restaurant of the museum, it has meant a salary and the possibility to stay in their community.

Yes, because even if I have a small salary the job here allows me to collaborate with my family's expenses. If I did not have this job maybe I'll be working in the field or I would have gone to "the other side" to the United States. (JP, 75-77)

The museum has to be supported, in this way we are generating more employment and the sons and daughters of the community members will have a place to work. In the private initiatives only the sons and daughters of the owners can work, no one else in the community can start working there. But in the museum everyone can potentially find work, if we have many tourists. (JM, 330-334)

The impact of the museum, as an economic force, has been then, related to issues of ecotourism. However, as discussed before, ecotourism presents the disadvantage that their economic benefit is not always evenly distributed and could generate social disparities (Orlove & Brush, 1996).

It is desirable that these economic alternatives are instituted in a way that makes them accessible to all members of the community, and in a way that makes the benefits likely to endure. Dr Fernanda Figueroa thinks that ecotourism is not overcoming these problems in Frontera Corozal.

Frontera Corozal has the benefit of ecotourism, we see here an important development of successful tourism activities, and we see a lot of expertise – yet

there are many people excluded from these benefits which is causing social division. (FF 227- 229)

According to Dr Elena Alvarez-Buylla another challenge that sustainable activities face in this region is corruption, found in government agencies, as well as in enterprises and NGOs that arrive on the scene more interested in the economic potential of tourist development, than in conservation.

You can see the impact of the corruption in some arms of the government. They want to derive some economic benefit from ecotourism developments and they press ahead without doing any research; they just proceed with a complete lack of knowledge, of models, surveys and future planning - both in terms of biodiversity and the conservation of non-renewable resources, as well as the disruption of social and cultural dynamics. (EA, 458- 463)

We can speculate that with social stratification and corruption intimately bound up in the development of economic alternatives, ecotourism will be successful neither as a long term contributor to the conservation of the environment, nor as a catalyst stimulating the improvement of the living conditions of the community.

Since investment on tourism that comes from outside is riddled with corruption and does not respond to genuine conservation aims, it is even more necessary to establish sustainable alternatives that respond to the communities' needs, that operate with transparency and that are rooted in their social organization of the community.

To conclude, it is however worth reminding ourselves of the positive aspects that do exist at Frontera Corozal, and which could indeed in time have an impact in terms of conservation of the region. First the community is organized and ruled within a democratic system that decides everything via an assembly, and which places all land under a communal-property management regime.

Certainly this system has helped the conservation of the area as well and it has helped the survival of the museum. It may be true that not all the members of the community are interested in the museum or in conserving the rainforest covering their lands but if a small majority is, then the project's survival is guaranteed. (EM, 157-160)

Secondly, it is plainly true that at Frontera Corozal environmental awareness is on the rise, even if it is linked solely to commercial benefits of the tourism activities. The realisation that the tourism is fruitful makes people realise that their lands are worth conserving.

Well, the community settled here 32 years ago here and during this time we have seen the environment deteriorate; if we don't take care of our mountains, our Reserve, we will just finish them off one day. We have people from outside coming to tell us that the jungle is being deforested and that this is not good, but we can also see ourselves how true this is. Tourists like the mountains, they like the jungle, that's why they come. That's why I think that if the community sees things in the right way they will see that all this is important, because more people from outside will come to visit the jungle. (JM, 253-259)

Following from this idealistic vision, we should turn now to a discussion of the strategies that favour the conservation of the Lacandon Jungle and that can alleviate the tensions and conflicts of the region. We can see in this case study strategies that, if properly expressed, could increase the capacity of the community to improve its living conditions and could even challenge the paternalist dependency on the government that has in recent decades developed in the area (Figueroa & Bonfil, 2011).

In the second part of this analysis, therefore I will explore the creation of the museum and the motives behind its foundation. I will examine the management of the project and the interactions between Ch'ol and scientists. Finally, I will probe the role the museum has had in restoring value to natural and cultural heritage in Frontera Corozal.

Part 2.

7.3. The community museum of Frontera Corozal

7.3.1. Introduction to the museum

Frontera Corozal has a population of around 4,000 people. None of the roads of the community are paved. The town has electricity and running water. However there are no gas pipes and no mobile phone reception. The community has two primary schools and one secondary school. There is no hospital, only a very poorly resourced health centre. The level of poverty is clearly visible, but some differences between the economic resources in the population are also notable. Whereas some people have houses built of bricks and cement with a cement floor, other homes are made of wood and have a soil floor. While some people cook with fire, others have gas burners.

This riverside frontier territory is surrounded by rainforest and is the entry point to the Mayan ruins of Yaxchilán, which are accessible only by the river. The importance of tourism in economic activities is evident in the town. There are several ecocabins for tourists that decide to spend the night, and an organization of fishermen who offer boat rides to the ruins. Several people make and sell handcrafts to tourists and there are a couple of small shops also that sell refreshments.



Fig 19. (A) One of the roads of the community (B) A child stands in front of the primary school of the community (C) The main road of Frontera Corozal that leads to the highway (D) The interior of a typical house of the community.

The museum is located on one of the main roads of the community, in front of the secondary school and very close to the pier for the boats offering to take tourists to the archaeological site of Yaxchilán. The building consists of a reception area, a restaurant and three galleries arranged around the botanical garden. For a photograph of the buildings that form the museum see Figure 21.

The museum's entrance (see Figure 20A) has a wide-open space and a large gate. Compared to the modest houses around it the museum seems quite big and modern. All the rooms of the museum are actually small individual chalets with white walls and palm tree roofs (see Figure 21A).

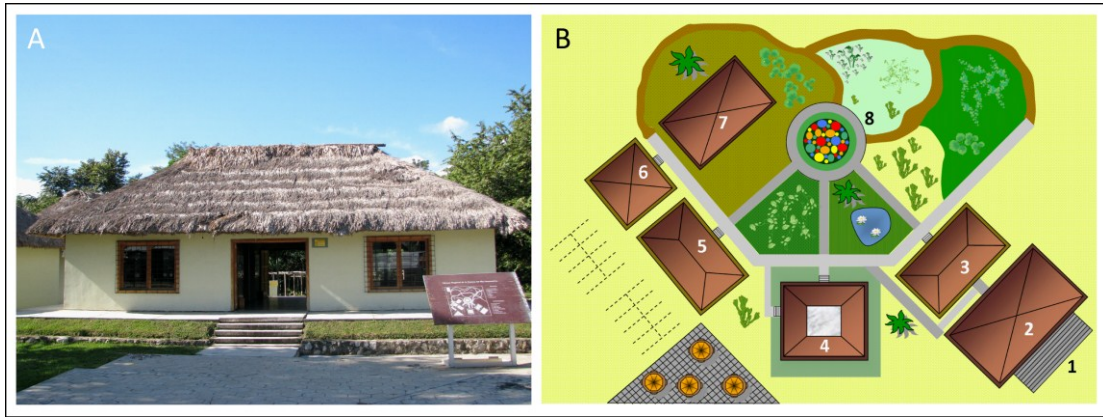


Fig 20. (A) The entrance of the Community Museum of Frontera Corozal. (B) Diagram of the buildings that constitute the museum.



Fig 21. (A) A panoramic photograph of the individual chalets that hold the different galleries of the museum. (B) A panoramic photograph of the botanical garden at the museum.⁷⁶

In Figure 20B we can see a diagram of the museum's galleries. After stepping through the gates of the museum (1), the first room the visitor encounters is the restaurant (2), followed by a gallery describing biodiversity of the Lacandon Jungle (3), with special emphasis on the importance of *Lacandonia schismatica*. After crossing this gallery, the visitor exits into the botanical garden (8); by following a stone path to the left the visitor now arrives at the second gallery (4), in which the two Mayan steles⁷⁷ are on display. Around the carved stones, a series of photographs tell the story of the discovery and the removal of the steles from the place in the jungle where they were found, to the gallery of the museum. The third

⁷⁶ Photographs (A) and (B) in Fig 21 and (A) in Fig 20 were not taken by me. They were provided by Dr. Elena Alvarez-Buylla who gave consent their use and publication in this research.

⁷⁷ A stele is a columnar stone or wooden pillar with carved inscriptions.

gallery (5) explores the colonization of the Lacandon Jungle and the arrival of the Spanish “conquistadores”. It also tells the story of the creation of the community, its social structure and indigenous customs. The glass panels in the gallery show the dresses and handcrafts typical of the Ch’ol people. Behind the galleries there are two other individual rooms, the office for the museum committee (6) and a storage room (7).

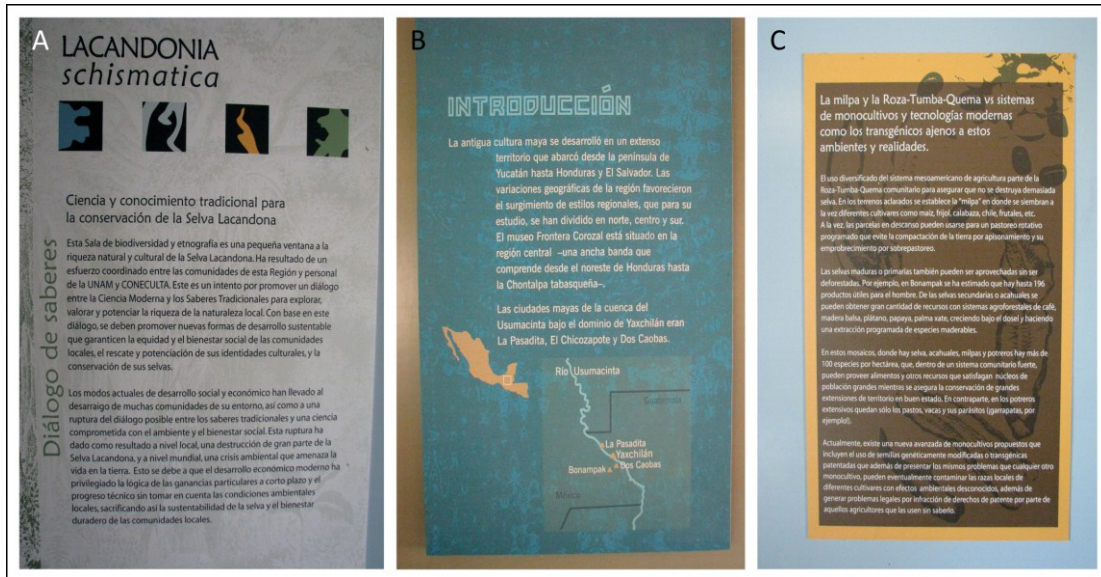


Fig 22. (A) Museum panel explaining the importance of formal and traditional knowledge in the conservation of the environment (B) Museum panel giving an introduction to the geographical area (C) Museum panel explaining the threats biodiversity of the jungle, such as monocropping and genetically modified organisms.



Fig 23. (A) An overview of the biodiversity gallery, (B) Glass case showing the typical rainforest flora found in the area, (C) Glass case showing the representative specimens of the faunal biodiversity of the Lacandon Jungle.



Fig 24. (A) View of the central area of the botanical garden. (B) Identification tag of one of the specimens of the botanical garden.

A committee appointed by the community's assembly runs the museum. The people in charge of it change every year or two. Their work, as it is a service to the community, has no remuneration. The committee of the museum is formed by a president, a vice-president and a treasurer. In addition, the museum employs two cooks and one waitress for the restaurant and one person in charge of the maintenance and cleaning of the galleries, restaurant and garden. These employees receive a fixed monthly salary.

7.3.2. The creation of the museum: reclaiming control of the patrimony

In Mexico, the historical, anthropological, archaeological and paleontological patrimony is guarded by the INAH (National Institute of Anthropology and History). INAH is a federal government bureau that was established in 1939 with the aim of preserving, protecting and promoting the Mexican heritage. It is also a research institute in anthropology and archaeology. The headquarters are in Mexico City but they have regional offices and INAH jurisdiction covers the entire country. It is responsible for safeguarding over 110,000 monuments from the postcolonial times and around 200,000 pre-Columbian archaeological zones. Most of these monuments and sites are open to the public. INAH also supervises over one hundred museums.⁷⁸

It is common practice that the Institute recovers pieces that are found in different parts of Mexico and transports them to the capital for storage and eventual exhibition in one of their museums.

The museum of Frontera Corozal was established in 2001 when some archaeological pieces were found in the lands of the Ch'ol and the local people resisted INAH's intention to take them away from the community.

The community members argued that their predecessors owned these pieces and that therefore they were the legal heirs of this patrimony. According to the testimony of Sebastián Arcos, a community member, and Esteban Martínez, a researcher, this was not the first time that INAH personnel took Mayan pieces that were found near the community away to the capital.

*in the beginning it seems that they found the steles and the INAH took them, you know that the INAH's jurisdiction covers the whole of the territory. You know, the INAH decides that things are federal property and that is final. (...)
But there was some opposition from the people of the community to the idea*

⁷⁸ Information about the National Institute of Anthropology and History is available at www.inah.gob.mx (Accessed, 17th September, 2014)

of the pieces going to Mexico City. There was some regionalism, a good thing, and they wanted to keep these pieces because they are their historical patrimony. (EM, 201-212)

The community regarded these pieces as important pieces of their cultural identity and were not willing to let the INAH remove them from the community.

There is something that can represent some pride for them, and it is these Mayan steles that they see as their own. (FF, 143-144).

Anyway, we found a Mayan stele in the lands of the community and we put it in a common room of the community and then the government came with a big van and took it and then we found another one, the one that is here now, and the assembly said in order to keep the stele we are going to build a museum and in there we're going to put everything and so we made the application to have a museum. (SA, 77-83)



Fig 25. The Mayan steles that were found in the jungle by members of the community.

By opposing the intentions of INAH the Ch'ol were carrying out a process of appropriation of their patrimony. The museum therefore, originated from the desire of the community to preserve their cultural heritage *in situ* and to keep their patrimony and resources in the community. But it was also a tool for resistance against the authorities. This is consistent with the ideas of Butts who states that one of the forms of resistance by indigenous groups is to reclaim their cultural property and its interpretation (Butts, 2007).

The resistance to government's decisions has also its roots in the history of displacement of the Ch'ol people of Frontera Corozal and the discrimination that indigenous groups have faced throughout the history of the region. The government is seen as an entity only too likely to steal the patrimony without compunction and without any sort of remuneration.

Sebastián Arcos, a community member and the president of the museum at the time of my first visit explains the reasoning behind this resistance.

To put together all the pieces we have, we are going to gather them and put them there. If not the government takes them. (SA, 83-84)

If we don't build the museum then government simply takes away our pieces; we felt they belong to us, because they are in our lands and they are valuable. They are Mayan pieces and our people descend from the Mayans that lived many, many years ago here, so they represent our culture. Is not fair that the government takes them. (SA, 96-100)

INAH agreed with the community that they could keep their pieces. According to Esteban Martínez, this decision was mainly because some years before, in this area, the Zapatista indigenous rights movement had made public, with widespread coverage and support from the national and international media, the discrimination and marginalization that indigenous people face living in the state of Chiapas. Light had been shone on the manner in which the government had

divested them of their lands and other rights and possessions (Ceceña & Barreda, 1995).

So the government had some pressure mostly because this was the time of the Zapatista uprising, that originated with hunger and a very deeply rooted discontent. So I think that in order to calm things down, and to create a national and international image in which the government helps the indigenous communities, they let them keep the stele and they built them a museum. (EM, 211-214)

The condition that INAH imposed in order to avoid the piece to the museum in the capital was to guarantee that the stele was going to be well preserved *in situ*, and in order to do that the community was forced to find funds to build a place to conserve it. The creation of a community museum was decided by all the members of the community through voting in the assembly.

In 2001 construction of the museum commenced, with the funding and support of CONECULTA (Chiapas State Council for Culture and the Arts). The funding, terminated however after the building was finished and the installation of archaeological pieces inside the museum had been completed.

The construction started in 2001, however the installation of all the archaeological pieces and the galleries on the history of the community and natural resources was completed in 2002. (FC, 24-27)

The infrastructure was handed over to us in 2002. The state institution in charge of the regulation of this is CONECULTA Chiapas. They gave us the money to set up the museum, but from that time they stopped supporting us. (FC, 50-52)

The initial proposal of the museum had contemplated that the museum was going to be financially sustainable owing to donations of the visitors. Yet from the beginning, the museum could not acquire enough funds to maintain itself.

Well there came a time when the community did not want this museum. I think it was about one year after its foundation. Problems had started and those problems were because it was not self-sufficient. We had some visitors but lots of them did not give any donations. Those donations were needed for the maintenance of the museum. (FC 166-170)

According to the statements of Florencio Cruz, a community member, in the community, the idea of setting up a restaurant arose as an alternative to produce an income.

So little by little we started to think: what are we going to do with this museum? And we started to sell more food, water; we started to sell more things so that the museum could survive. And so we generated more income. I can't say that this income generated a profit, we had income enough only to maintain the museum. And that is how things are now. We don't have much profit, but the museum is still working. Maybe not as well as it might, because we lack experience in the management of the museum, but it is working. (FC, 176-184)

It becomes evident that the museum represents an important part of the community and that the inhabitants of Frontera Corozal have looked for ways to make it successful.

Simultaneously the community members began to look to other associations and institutions to solve the funding problem

We started to write proposals for funding from different institutions, but we never got the support. Then in 2004 we started to work with the UNAM, the university, with the Institute of Ecology and the Institute of Biology; and they gave us funding and support for different projects within the museum." (FC, 39-42)

CONECULTA gave us the money to build the museum, but did not provide us with money for many things. Just to build it. After that we made the agreement with the biologists from the UNAM. And with the money they gave us we made the biodiversity gallery. The museum has always sustained itself with the earnings of the restaurant (SA, 105-109)

In 2004 researchers from the Institutes of Ecology and Biology of the National University (UNAM) started to collaborate with the community; more funding for completing the museum was now secured. The project put its emphasis on a representation of the biological diversity of the Lacandon Jungle and with the new funds a botanical garden was built and a new gallery of biodiversity of the jungle was opened.

*And then there was a strengthening of the information about our own natural resources, the jungle. We put some photographs, posters, lots of information, and also we gave more emphasis to *Lacandonia schismatica*, which is a representative species of the jungle of this region. (FC, 43-46)*

As I have shown, the museum has faced financial difficulties, lack of participation and interest in the community. However, in spite of these problems, the assembly has decided to keep the museum, has searched for funding and has tried to maintain it in the best possible way. This shows the overall importance of the museum in the eyes of the community. And according to testimonies from the people of Frontera Corozal, the importance given to the presence of the museum in the community, rests on the conservation of the cultural patrimony and the economic benefits brought by tourism.

Here we find, well, the foundations of our ancestors, the Mayan; the fact that there are so many of the steles is proof that the Mayans were here. And so in this museum we are showing visitors that we as Ch'ol appreciate our origins, we keep remembering our past. So the museum is a very important tool to

show the Mayan and the Ch'ol cultures, which come from the same ancestor.
(FC, 79-84)

Furthermore, these statements also show that the museum is an instrument in which tourists can get information about the richness and culture of the Ch'ol community.

Because then they know about our culture, about the Mayans that lived here before us. (LA, 142-143)

Yes, it is important. Because then we have tourists that visit it and we can show them everything we have in the community. We have the Mayan steles and other things and it is important that the tourist see it and that they learn what we have here in this community. They can learn a bit more about us. (JP, 128-131)

In essence, the community had launched the museum. But the intervention of the academics and researchers from the National University brought new ideas and introduced new dynamics to the project. This topic is analyzed in the next section.

7.3.3. Intervention from outside experts and the process of appropriation

The literature is clear that the success of a community museum depends on how deeply involved that community is with the project (Ducet, 1999). As we have seen in the previous section, the creation of the museum emerged from the opposition of people of Frontera Corozal to government policies regarding the conservation of archaeological patrimony. Although the initial idea of creating a museum came from the community members, from the beginning of the project the community members collaborated with outside researchers, academics and government officials.

It is evident in the following quote that the intervention of outside collaborators left the community with little power to decide what to put inside their galleries.

So, at the beginning we just collected pieces of Mayan people that community members had found in their lands and we put them in a gallery. They were not many, the main piece was the Mayan stele I told you about. After, people from CONECULTA came and showed us their design. Also people from INAH came. Then some people came to design the gallery where the history of the community is represented. They were deciding what to put in the galleries, they made all the plans. I guess because they are the professionals. But at the end, before they took final decisions they asked us our opinion, because the museum is ours. (SA, 114-121)

Apart from the scientific interest that brought the researchers to Frontera Corozal there was a desire to help the community develop alternative economical activities apart from livestock or agriculture, which are so damaging to rainforests. Furthermore, given that the community has a very possessive attitude with to their resources, the researchers needed to develop a project that had brought benefit to the community. This would make it easier to get the permissions needed in order to for working in their lands.

Esteban Martínez describes how Dr Alvarez-Buylla came up with the idea of refurbishing the biodiversity gallery and the botanical garden.

Then Elena started to work with them and she needed to collaborate with the community so that they would let her work with the Lacandonia. So she was looking for a project that would benefit the community and she came up with the idea of refurbishing the biodiversity. (EM, 221-223)

Dr Alvarez-Buylla narrates the motives behind her involvement in the project.

We wanted to see if we could collaborate with the community and generate some initiatives anchored deeply in their own institutions and organizational forms of governance; initiatives aware of the use of their own resources, aware of their knowledge and appreciation of natural resources; initiatives

that looked for a more equal distribution of the possible benefits of the use of these resources and environmental services. (EA, 50-55)

The project had a strictly biological side of making flora and fauna inventories of the region and researching *Lacandonia schismatica*, while another part dealt with the development of the gallery and the botanical garden.

So one part of the project was the inventories and the molecular biology of Lacandonia schismatica and its relatives; and the other part was the community development project, which used most of our resources. The community development project focused on the development of the biodiversity gallery of the museum and the building of the biology station that is now transformed in the high school of the community. Ah and also the botanical garden. (EM, 291-298)

The researchers were committed to the vision that the project they wanted to develop would be embedded in the governance institutions of the community; and that it would call forth a high degree of participation.

The motivation behind this involvement was the desire to understand the relationships of the Ch'ol with nature but also to help them in improving their living conditions.

To understand deeply which are the relations and limitations and interactions of rural communities with nature. All of this in the search of a more dignified life and a more equal distribution of the benefits of environmental services and a bigger participation of the community. (EA, 37-38)

Alma Delia de los Ríos, part of the researchers' team, argues that participation was vital to the project.

well the most important thing is to work with them, you can't arrive and tell them what to do, you have to work with them. (AD, 46-47)

The researchers were seeing this approach as a way to get an insight of the social and economical problems of the area and to establish long-lasting collaboration with them.

Another important thing was to create the opportunity to talk to the people, to find out their problems, we wanted to know from their family and community perspective how we could help them. Also we wanted to show them that the door is open for them at the university - we want to keep on supporting them with projects they want to carry out. (AD, 117-125)

The project looked for a high degree of participation and many decisions included the participation of the community. However, when it came to the contents of the galleries there was a lack of participation with the community. Decisions on the museography and on the content were taken by professionals in the University and were put to consultation with the community assembly only and not with the entire community. However, in the first stages of the collaboration process between the university and the community many workshops were set up to involve the community members with the museum's activities. The workshops involved working with children, exploring with them the work of the biologists' activities in the jungle, and encouraging conservation activities like recycling and rubbish disposal.

There was a lot of stuff that we prepared in meetings with a certain working group of professionals museographers in Mexico City. There, we decided what activity to carry out first, what work to do, but we were also working with the community all the time. (AD, 56-59)

Decisions about these workshops and other conservation activities were not taken with the community but in Mexico City with a group of communicators from the University.

We had all these sessions and we said, well next time we go to the community we have to do this and that - we arrived with a structured work plan, but we still made all the decisions here. (AD, 59-61)

However, sometimes plans had to change upon their arrival to the community.

Maybe we changed our minds in terms of what kind of work to do or in terms of what was happening at the community that might interfere with what we had planned. (...) So we prepared many things in advance and we had a general notion of what we wanted to do, but many things were decided and solved with the people. (AD, 61-67)

An important component of these workshops was the inclusion of children in an attempt to show them the biodiversity of the area and make them aware of the work of the scientists.

We showed these kids the work that the biologists were doing in the community; the way they collect specimens in the field; what they do with the spiders, where and how do they store them, how do they study and classify them. (AD, 76-78)

Some children of the community went with the biologists to the field to collect specimens for the museum.

They took them from the museum to the field, they collected the spiders and put them in jars and the biologists explain them which spiders they had and why were they important for the zone and what their biological importance was. (AD, 79-82)

Despite these efforts by the research team to include the community, the greater part of their communication process was mainly directed at the members of the

assembly⁷⁹. There was not a consultation process with the wider community to ask their opinion in terms of content of the galleries.

I think the communication they had was only with the community members in the assembly. I remember some people received some training to go with them as helpers and help them to catch animals and plants for the collection. But, no, we were not asked what we wanted to have in the museum. (FC, 338-341)

Lucía Arcos, one of the waitresses of the museum restaurant, told me that the process of creation was not inclusive.

We would see them in the museum here working, but I did not attend any meetings. I think sometimes they did something with the school children. They came to Frontera to talk to the authorities or at the assembly. I don't think they met with anyone else. I came when they open the museum, there was a ceremony. (LA, 56-59)

From these testimonies we can infer then, that the creation and development of the museum did not have an equal level of participation among the population and only a group of people had the opportunity to collaborate.

... (it) is only a group of people that are involved in the museum, not the whole community. (FF, 131)

Using the classification of Nina Simon (2010: p.187), discussed in chapter 3 (page 80) of this research, the members of the assembly collaborated with researchers, whereas the rest of the community only contributed occasionally, in this case providing some archaeological pieces or participating in some workshops.

As described in chapter 4 (page 96) community-based conservation projects face many different difficulties. These include the organizational problems given the

⁷⁹ It is worth clarifying here that not all of the community attends the village's assembly. Each family is represented by one member, which is generally the father.

traditional methods of governance of the communities; communication ruptures between different participants; and the lack of trust in government officials. All these problems were amply present during the creation of the community museum of Frontera Corozal, making the collaboration between researchers and community members very arduous.

Well it was sometimes a little bit difficult. Sometimes we did not understand each other well. Some people in the community were not happy that they were coming here to our lands, you know, some people thought that they were coming here to steal plants and animals. They don't understand the work of the biologists. And if they don't like them they won't let them work. With the museum it was a little bit different: the assembly saw that this project was for the community – and so they reached agreements. (FC, 324-329)

The work with the community was always very difficult; every time the authorities changed we had to start all over again. The new authorities never respected the agreements we reached with the old ones. So time and time again we would go to the new authorities, the new committee of the museum, the new committee of the restaurant, and talk to them. It was a very difficult and exhausting process. (EM, 238-242)

The outside researchers set goals with the community in terms of the maintenance of the museum, and the development of projects.⁸⁰ Although they did accomplish some goals and have kept the museum going, some of the agreements have not been fulfilled. As examples, the botanical garden has been completely abandoned and the workshops with the children have dwindled and extinguished.

They have not reinvested, as we had agreed, in making new handicrafts and merchandise using either the designs we left with them or with new designs. Nor have they developed the workshops with the school children, as we had agreed. EA (279-282)

⁸⁰ For a description of the stated aims of the museum of Frontera Corozal see Chapter 1 page 32.

Dr Elena Alvarez, believes the failure of the agreements has a simple explanation: the community sees the significance of the museum as lying solely in its economic activity. Its role in conservation, in the preservation of the patrimony, has been accorded less respect.

The community has failed to achieve the objectives we set together. They have not maintained the botanical garden. But they have kept the restaurant going, showing that everything that gives them a direct benefit is seen as important.
(EA, 271-274)

The failure by the community to fully appropriate all aspects of the original vision is revealed too by the lack of interest that the community members show towards the content of the galleries. As is shown by the following quotes, the museum itself does not seem an important element in the daily life of the community

People don't show interest in the museum. It is very rare that someone from the community comes to the museum. And well the kids, it depends on the school and the teacher and the subject they are studying. Sometimes they do come to make their homework on the jungle or the Mayans. (JM, 122-125)

Not really, just a few people from the community come here to visit the museum. No one is really interested in visiting, some people have never been here. (JP, 97-98)

José Mendez, the president of the museum at the time of my second fieldtrip, thinks that people lack motivation to visit the museum and learn something from the community and its environment.

Maybe some people come here but not many. Sometimes if they come they see the museum very superficially, but they don't want to expand their vision and knowledge or to be happy about their museum. (JM, 154-156)

The bad thing is that the community has no interest in finding out what is inside the museum; the only thing they want from it is the money. No one knows how to make the most of this project. (JM, 185-187)

Fernanda Figueroa, who conducts research in the area but was never involved in the museum states that there is no relationship between the people of the community and the museum.

I didn't see much relationship of the community with the museum. I didn't see people from the community in the museum, which can be normal; I mean probably all of them know it already. But, well, I saw it as outside of their daily life activities. (FF, 149-152)

The museum seems to be destined only to tourism.

Well, not much, but sometimes they come and visit the museum. Sometimes. But this is for the tourists, they are the ones that come to see the museum and eat at the restaurant. (LA, 71-73)

Nonetheless community members' testimonies indicate that they do see some importance in the museum.

The museum is pretty and the children that come from outside like it so the children from here might like it too. And it has information where they can learn things. (LA, 92-94)

I think it's pretty. I like the gallery of the biodiversity, because it has many photos and the plants and animals. I like the botanical garden as well, before the floods, when we had lots of orchids. (JP, 140-142)

Well I think the museum is working well, we get many visitors and they enjoy coming here. That is why we keep it clean and nice, so visitors come to see it and to eat here. And there have been some projects to repair some damage

from the rain in the galleries and the restaurant is being remade, it's going to be bigger. I think also the botanical garden will be changed. So it is in good shape, the museum. (JP, 65-69)

We can see here that on one side there is a “sense of pride” in the population of Frontera Corozal in regards to their museum. They like it and feel proud of it. They also recognize the value it has in communicating their heritage. However, on the other side, the value of the museum for the community is mainly acknowledged in terms of its stimulus to tourism. The people of the community do not visit and show no interest on what is inside, the museum is regarded as a place where tourists, but not themselves, should go, to learn of their culture and their environment.

They see it as a place where tourists can come and see or learn what they have in their community. (FF, 125-126)

But the rest of the community does not come. They are not interested; they only come here if they want to sell things to the tourists. (SA, 134-138)

So the museum is a tourist attraction that has the potential to give them economical benefits. Other than that I don't see the role of the museum in the community. I think the museum is important for them but in terms of income, as a tourist attraction, it is a project that has not been appropriated by them. (FF,135-138)

José Mendez thinks that there is a lack of vision and motivation to expand and improve the museum.

Some people have good heads and some people have bad heads. Some people do not believe what you tell them. (...). If they managed to think a bit more they are going to see how many opportunities the museum has and they would get involved to work here or to take care of the museum. (JM, 198-201)

Despite all the difficulties that the project has encountered, which have hampered the involvement of the community in the museum, there is widespread recognition by local people of its potential as a way to promote the Ch'ol culture, its way of life, and its environment.

I interviewed José Mendez during my final visit to the community. He was serving as president of the museum at the time. His duties include the management and maintenance of the museum and the restaurant. He works alongside a treasurer who is in charge of the finances of the museum. He seemed to be very committed to his task. During my conversation with him I got a sense that he was very motivated to improve the museum while serving his term as president. I also got a sense that he felt desperate by the general lack of interest in the community to make the most of it.

We are maintaining the museum, but there are no proposals for improving. People's brains are not into it. We have a beautiful museum, but it is necessary to get more organized. For example, to make the botanical garden more beautiful. (JM, 190-192)

In the following quote he highlights the importance of the process of appropriation. He believes that the realization that the museum belongs to everyone is vital in the survival of the project.

By putting interest and by appropriating it. We have to think that the museum is ours, although it is not only ours, it belongs to the community in general. They have given us their trust to manage something that is everyone's. We have to be worthy of that trust and manage this museum, that is the people's property in a good way.(...) Each member of the community has a little part of the museum, and that is why we have to improve it. (JM, 78-84)

Fernanda Figueroa believes that the lack of interest has its origins in the fact that the creation of the museum did not leave the community the opportunity to reflect

on themselves. Researchers did not give importance to it, but also community members did not claim this space as a way to express their “view of the world”.

It is important that they have it in terms of the potential that it can have a process of appropriation and transformations were to happen (...) maybe through a process of dialog in which the community created its own discourses and its own way to show themselves to the world or to share who they are, what they think, how they see the jungle, how is their way of life, etc. (FF, 163-167)

If these conditions were to be fulfilled, Dr Fernanda Figueroa argues that the museum has great potential to be an instrument of revaluation and communication of heritage.

So that is why I think it can be important, because it has a great potential. But if this process doesn't happen the museum will never be more than an income source, an information source but only for visitors - that can be very interesting but its for visiting tourists. (FF, 168-171)

According to José Méndez and Florencio Cruz, without a process of participation and take over of the project by the whole community, the project has a serious risk of failure.

We can achieve lots of things if we stick together, if we are united. If the community has no interest, even if there are some people that want to improve, this project will not succeed. (JM, 203-205)

I think it is important, because we have many projects to keep developing (FC 261-262)

we have to open a space for this to occur, so that we can keep promoting the culture, the importance of biodiversity and of all the resources we have. (FC, 228-229)

7.3.4. Dialogue of knowledges, attitudes to each other

As was discussed in the preceding section, the reason researchers became involved in the life of the community was so they could establish a participatory project in which community members had a meaningful role in decisions regarding the museum.

So when we started to work in the community, the Ch'ol community, they were the people pushing for a collaboration agreement - and so we started to have a stronger relationship with them. (EA, 124-127)

A very, very important value of these museums is that the community has an appropriation of the museum, both in the operation of it and even in the first idea, that of having a museum in the community, showing whatever they have in the community. (AD, 270-272)

According to both Dr Alvarez-Buylla and Alma Delia de los Ríos the collaboration was planned in a way that facilitated the takeover from the community.

We planned the process like this on purpose, we wanted to be the ones starting the processes and then withdraw and leave the community to manage them afterwards. (EA, 233-234)

With the excuse of an academic matter and a geographical place where a plant is grown we decided to do something more ambitious; to set up project that went way beyond our own interests as researchers; we wanted to see if we could collaborate with the community, and generate some initiatives anchored deeply in their own institutions and organizational forms of governance. (EA, 58-63)

According to the researchers their project looked for a dialog between scientific and traditional knowledge. They claim to have achieved this in the creation of the museum.

Dr Alvarez-Buylla claims that the museum represents,

A dialog between these two sides of knowledge, in search of a self-managing system of conservation, knowledge use, and sustainable development of this highly biodiverse zone.(EA, 215-217)

She states that museums panels reflect the importance of the dialog between knowledges,

Also, we made very scientific panels, with more elaborate language but looking also to reflect on traditional knowledge with its ideas on the use of medicinal plants, food, traditional planting techniques, and handicrafts. (EA, 252-255)

If you look at the themes explored by the gallery you can see how it establishes the importance of having a dialog between these two sides of knowledge, in search of a self-managing alternative for conservation, knowledge and sustainable development of a highly bio diverse zone like this one. (EA, 214-217)

My interviews revealed, however, that despite the importance that traditional knowledge is given in the discourse of the gallery an actual process of dialogue of scientific and traditional knowledges never happen in the development of the project. There was never any consultation with people from Frontera Corozal in order to include their traditional knowledge in the gallery. Researchers negotiated with people that conform the assembly, but the majority of the community was left out of the decision-making process. The implementation of the project made it impossible for community members to include their vision of the world in the museum's script.

No, I never saw them in activities like that, I guess is because this place is more for the tourists. They had meetings with the authorities but not with us. (JP 122-124)

In contrast to what Dr. Elena Alvarez-Buylla states, Dr. Fernanda Figueroa believes that the “vision of the world” of the community is not represented in the museum.

The first impression of the museum is that it represents a vision from outside, it seems that there was not a dialog with the locals that allowed them to explain it through their local vision. Only the outside vision is represented. (FF, 102-104)

This was not coming from the people, it is a reinterpretation of their reality made by outsiders. (FF, 109-110)

She argues that the museum looks like any other anthropology museum made by curators. There seems to be no input towards gallery content from community members.

The same happens with the cultural aspects of the museum, the traditional costumes etc. It follows the same line as the anthropological museums; it represents the vision of the academics or the museographers. (FF, 110-112)

She argues that if a real process of dialog among researchers and community members had taken place in the creation of the museum both visions would be reflected in the galleries.

And it terms of the proposal itself I think a dialog and negotiation was lacking, where the visions were combined, or where we could see both visions. We cannot see, at any time, how the population sees biodiversity. (FF, 116-119)

During the analysis of the interviews I have identified several reasons that prevented the establishment of a real dialog process, and I will discuss this important matter in the following paragraphs.

Firstly I saw that one of the reasons community members were excluded from the decision making process was their lack of knowledge regarding how a museum gallery is put together. The museologists and biologists did all the design of the gallery and made all the decisions regarding the information represented there. The community only participated in the approval of the project.

Well I think that we did involve them and we asked their opinion in many things. The museologists made proposals and they said if they like them or not. Most of the time they agree to what the museologists proposed. But look, we could not involve them more because they don't have this kind of knowledge. They don't know how to make a museum. Even I wouldn't know how to design a gallery. So we involved them to the extent that we were convinced they could help. The museologists did their work and we as biologists did all the information and the community were only asked for approval. (EM, 397- 404)

Sebastián Arcos explains how the process of communication was with researchers.

We had some communication, most of the time it went well. And they presented their projects to us to get approval. So the community did not participate in the decision of what to put inside the gallery or how to arrange it, but is normal because we are no professionals, we have no studies. Also, they were the ones giving us the money to build it. (SA, 125-129)

In this quote we see the underlying power struggles of the communication process between the groups involved. The scientists' academic credentials and role as founders of the project gave them decision-power over community members.

While community members claim they were not asked to participate, all involved researchers claim, that there was a real inclusion.

The community participated very actively with the group of researchers that were in the project and the agreement was that it was an initiative that they will have to appropriate later on. (EA, 242-245)

In my analysis of the interviews I noticed that the participation was encouraged in two ways: 1) decisions about the creation of the gallery and the botanical garden were consulted with assembly members, and 2) some participation activities were planned, for example the workshops with the children. However, these activities only included a certain group within the community: the assembly members, the museum committee and in case of the workshops, some school children. The dialog of the outside researchers was only with them, a small proportion of the community.

Well we established a conversation with the people that were forming the museum committee on which subject they were interested in, plants they use as food, medicinal plants, if they wanted to have specimens. (EA, 341-343)

A group of people participated in all the stages of the creation of the gallery, in some aspects of the design, in the decision of which handicrafts to put on display. (EA, 346-350)

The effort to include the whole community commenced only after the gallery had been constructed and everything was in place. The community was invited to attend the opening day.

The opening day was a key moment. We invited the whole community to visit the garden and the new gallery, to become part of it. Because all the material there, the photos, its all communal material (...) It was an attempt to make them take appropriation of the space, to make the villagers proud of what we are showing here, all the things the visitors are going to see it. (AD, 153-158)

The inauguration of the museum was very concurred and people showed interest towards the museum, however interest faded afterwards. No other attempts have been made to make the population interested in their museum.

It's like all new toys, it caught the attention and everything, but I think there has to be a continuity process. (AD, 164-166)

As previously said, the communication efforts during the planning process of the museum were directed only to the assembly members and the museum committee. This situation brought another difficulty. According to communal rules the assembly and appointed committees must change every year, posing a management problem for the continuity of the museum project.

Then the people that we worked most extensively with were obviously the members of the museum committee, which changed every year. That's why it has been so difficult. (EA, 364-365)

The change of management, for example, is very hard to deal with. (EM, 315)

This difficulty is consistent with the problems that cooperative management can pose to the groups involved. As I discussed in chapter four one of the problems is the organizational incompatibilities between state offices of conservation, NGOs, conservation agencies, research institutes and local populations (Orlove, 1991, 1992; Conklin & Graham, 1995).

Another issue that hindered collaboration between scientists and community members was the deep lack of trust that people of Frontera Corozal have towards outsiders.

That was very difficult; we started to get aggressive behaviour from several of the community members who began to feel threatened by our presence. (EA, 162-165)

Their history of displacement, and their very difficult relationship with government, has produced in the community a fiercely protective attitude to their resources. They have a strong suspicion that their current patrimony will be taken away from them (it has happened to them once already) which makes them impose many conditions on the scientists who want to set up research projects in their lands.

They wanted to know why we were so interested in the plant. Straightaway they began to see the plant as something they could exchange, something of economic value (...) So it was, and still is, very difficult to work with this species, due to this very troubled relationship. (EA, 110-115)

Sometimes they let us collect the plants only then to demand that we return the specimens - because they thought they were very valuable - if we didn't, they said, we would end up in jail. They threatened us with jail several times. (EA, 383-385)

The community was initially not convinced of the good intentions of the researchers and granted them permission to carry out their research only if they fulfilled certain conditions.

We built the biological station, in order to keep our equipment there and to have a place to work. And after we finished the work we left that building for the community to use as they pleased. That was one of the conditions the community imposed on us. In fact, that is how this community worked with us, always imposing conditions. (EM, 232-236)

After the project was finished and the biologists stopped using the station the community took the building and is now being used as a secondary school.

The analysis of the interviews shows that there is lack of trust on both sides. The scientists, for all their initial enthusiasm, have developed a jaundiced image of the community members, as we can see in the following quotes.

What are the challenges? The challenge is: do you get a community like this fully involved in the project? (EA, 294-295)

Here we had the challenge of working with a community that is particularly resentful and corrupted. (EA, 309-310)

The difficulties that working with the Ch'ol community represent. (EM, 300)

When approached by the scientists the community members did not share the ideals of conservation of the project. This lack of interest gave them a negative image among the scientists.

(They have a) very primitive mentality, they burn the forest they have one or two years of agricultural activity and after they use the land to raise cattle. (EM, 193-195)

They are not authentically committed to key principles. Instead they have many vices. (EA, 96-97)

This image that the scientists have of the community highlights a contradiction in their scheme. The scientists were idealistic as they planned the project, and had great ideas about community appropriation, but the fact is, as shown by these quotes, that the scientists do not trust the community as being able to carry out sustainable development projects in a successful way.

Esteban Martinez's pessimism was confronted by the fact that the community had managed to keep the museum going.

It was very surprising to me to see that after the first year the museum was still working and in perfect condition (...) it is admirable that, I don't know why, people are making it last. Somehow it is working. (EM, 254- 258)

Nevertheless, despite the encouraging fact that the community has managed to keep the project going, the lack of depth of the involvement has led to abandonment of several agreements between the assembly and committee. Most notably, the botanical garden that the scientists built now lies forgotten and there is no relation between the museum and the schools of the community.

Well what I don't see is any sign that the community using the museum as we all intended: with the young people and the kids from the community. The schools don't use the museum, they don't see that it can contribute to their education, they just don't use it. (EM, 258-261)

The community has failed to achieve the aims that we set together. They haven't maintained the botanical garden, but they certainly have kept the restaurant going, which shows only too clearly that everything that gives a direct benefit is deemed important. (EA, 281-284)

In spite of all the problems with the dialogue between scientists and community, there is some acknowledgement of how scientific knowledge has enriched the traditional expertise of the people of the community.

Both Esteban Martínez and Dr. Alvarez-Buylla argue that the scientific knowledge of the environment has increased.

*Still, if you talk now with almost anyone, well, everybody knows what *Lacandonia schismatica* is. (EA, 393-395)*

For example, they are very good at knowing which plant is used for what, but they do not know the scientific name, and we have taught them that. (EM, 353-355)

The difficulty in developing a real dialogue between different knowledge traditions is acknowledged by Dr. Elena Alvarez-Buylla, the lead researcher in the project. However, she continues to believe that it is through the establishment of this dialog a real understanding of the one with the other can indeed be achieved. She sees this dialogue as essential in establishing projects that are to have a long-lasting effect in communities.

It is a very big challenge because we scientists have to be more open to learning, to really understand these other forms of knowledge. (EA, 481-482)

So I think that as long as this profound dialogue can be established, where the discourse can be transformed through the exchange of knowledge. It is important to respect their traditional ways, but it is also important to challenge the ways that are unjust and are inherited from the colonial times or even from the pre-Hispanic times even. I am talking about gender inequality, the chiefdoms. (EA, 486- 490)

Here again, the previously discussed moral and political commitment of the team of scientists in regards to the improvement of social and economical conditions of the community is evident in their discourse.

Formal science can have a virtuous dialogue with this traditional knowledge only if there is a mutual respect; and only if it is used for social benefits in terms of conservation and sustainability, and not as a tool for the enrichment of private enterprises. (EA, 490-493)

These enduring ideas of the importance of establishing a dialog, in spite of all discouragement and difficulty, have ensured that the researchers maintain their involvement in the project. A lively recognition of the debate is evident in all my interview material with the scientists, who are consistent in wanting a bigger presence of researchers in the community.

We want to keep this debate going and to construct viable alternatives to development. (EA, 190-191)

Hard work and a lot of presence are needed. Inside the community there are many good people, honest, that have participated actively, sometimes with power, sometimes not. (EA, 402-404)

Elena Alvarez-Buylla even suggests the issue is important enough to warrant the establishment of an organization that could facilitate the development and management of projects that rely on good communication between scientific and traditional knowledges.

I think it would be fairly straightforward to help conservation projects get the right mix of traditional knowledge and formal science, so that they can discover alternative solutions. , You need a global and national organization to facilitate it.” (EA, 204-206)

Fernanda Figueroa believes that outside intervention is necessary given the lack of infrastructure, resources and education of the population. However, she believes these interventions need to establish real dialogues and processes of participation, in order to let community members express themselves.

There is a need for people from outside ... to come and establish these dialogues and to help them grow, in terms of technical support or consultancy, so that they have their own representation of their life. (FF, 173-175)

7.3.5. Managing the museum, organization within social institutions of the community

Frontera Corozal is a community that practices communal land ownership. All land and all the resources of the land are conferred to the community and divided according to the number of initial households in it. Within the community the main governing body is the General Assembly, in which all households have representation. Everything is decided in the assembly and the majority of the community has to agree on something if it is to be done. All the community's administrative positions are appointed in the assembly and they rotate every year or two. All community work is unpaid. According to the interviewees' accounts it was through this scheme of governance that the establishment of the museum was first decided upon and a committee formed to manage the museum. All community members elect this museum committee in the assembly. The museum committee changes every year and re-election is just possible once.

The museum is managed by a committee, and that committee is formed by five people, and that is the administrative committee. It consists of a president, a secretary and a treasurer (...) They are the ones in charge of the wellbeing of the museum. (...) The assembly proposes someone as president for example and if there is a majority in the votes then that person stays. (FC, 109-115)

The community rules itself by communal laws and the assembly. The museum was seen as so important that the Assembly established a museum committee. We have been working with several of these committees, over the years, some better than other, some more interested and more involved than others. (EA, 258-261)

The management scheme that governs the communal property of the community has both positive and negative aspects. One of the failures of the system is that there is a lack of continuity in the projects. This is mostly due to the simple fact that the post holders changes very quickly, but it is also significant that new

committee members do not go through a process of induction and training at hand over. Periodically, the administration of the museum must start from zero.

The committee is appointed but we don't have any knowledge, no one came to give us training or any kind of workshop, we just started the work like that, without any knowledge on how to do this job. (JM, 32-34)

Well it is bad, because when a new one enters they don't know what to do, they don't know what problems they have to face and when they are just starting to know the job well, they change again. But if I could stay for two or three years in the job then I would have a better understanding of problems and difficulties. (SA, 177-179)

Nevertheless, as Esteban Martínez points out, this system is democratic and encourages community members to undertake activities in benefit for the community. The decisions of the assembly and the committee are always respected.

However the system can also have benefits, in theory, since everything is decided by them, there are no personal interests involved, just the interest of the community. I think this system has helped the conservation of the area as well and it has helped the survival of the museum. Maybe not all the members of the community are interested in the museum or in conserving the rainforest that is in their lands but if for a small majority it is like that then the projects have a guarantee of survival. (EM, 161-166)

Dr Alvarez-Buylla highlights the importance of maintaining democratic institutions in the decision-making processes involving communal goods.

They have an assembly and generally [the people] respect the agreements of the assembly. This is the kind of institution that we need to encourage, helping them become more just and egalitarian, introducing new ideas, like gender equality. (EA, 103-106)

According to the statements of community members and outside researchers, one of the biggest obstacles faced in terms of the administration of the museum is the lack of interest and commitment shown by the appointed museum committee presidents. The assembly selects the committee from the members of the community and it is their duty to take on the role, even if they are not motivated to do it.

And most of the time, the administrators we have had are not willing to do it, like what we were saying about the botanical garden, it is there abandoned. When the committee changes, because the administrator is not well established and does not have an interest in the museum. So that is one of the failures we have had. (FC, 158-161)

Again the participation and motivation of the population is regarded as essential for good management and improvement.

I believe that when the museum has a committee that is interested in the museum, then we have a motor that will make things work. We can have many important things inside the museum, but if the people that represent it have no interest, then it is of no consequence if we have a nice museum, with good information and some valuable pieces. The museum has no value if we don't make people interested in the museum. (FC, 100-104)

Sometimes [the committee] is only partly helpful, because there are some people who just are not interested in working in the museum and so they shouldn't be there. But then there are other people that have done lots of work for the museum and because it only lasts for one year all they can achieve in one year is stopped when the new authorities arrive. That is one of the problems, sometimes it can be an advantage and sometimes can have some disadvantages because not everyone has the interest of give their own time and effort to consolidate the projects of the museum. (FC, 133-139)

First of all we have to have a good administrator, after we have to have an interdisciplinary team that can help in whichever way they can. And I believe that could be the essence of a working strategy to have a beautiful museum of high quality that is well taken care by the people. (FC, 353-356)

As we have seen in preceding paragraphs, the improvement of the project depends heavily on who is appointed by the assembly to be in charge of the museum. Given that my research brought me to the community in two different occasions, I could have an insight as to how much the president of the museum's willingness and involvement played a role in the development of the project. In my first visit, Sebastián Arcos was the president of the museum and he told me that his job was to deal with the administration only and that there were no plans of improvement or other projects to develop in relation to the museum.

But there are no new programs, I only do the administration. All the everyday administration is dealt by the committee only. (SA, 42-43)

One year later, the president of the museum was José Mendez, who noticed the lack of interest that previous authorities had in the improvement of the museum and decided to act against it.

There was not an intention of the authorities to improve it. The commissioner and sub commissioner have no intentions of coming here to see the state of the museum. It was abandoned by the authorities of the community. (JM, 29-31)

José Mendez had the motivation and vision to improve the museum, to secure more funding and to develop participation of the community.

The museum needed that we put our interest here to pick it up. We had to see people and knock on many doors to see who wanted to give us financial support to make it better. (...) And with the money we secured we started to improve the restaurant. (JM 36-42)

We are improving every day; we are getting the hang of it, getting more confident with our work. Now we have more knowledge to improve the museum, to make it bigger. Because in my vision, this museum cannot just be left like that, abandoned, it has to grow, to get bigger. The museum is property of the community, it belongs to everyone but the authorities were neglecting it. (...) They show no interest. If the authorities have no interest in the museum no one in the community is going to have an interest in it neither. That can't be. We have to be united to see that the museum is going forward. (JM, 47-57)

There is a strong sense of commitment in the testimonies of José Mendez, which contrasts with the lack of interest of the previous president.

As I told you before it is possible to find ways to make this museum work. The thing is that we are supposed to do only one year in this post. I have been two years here because I want to stay here longer, to finish these projects that I have, to finish properly and make a report to the community. But my job here ends soon. I don't know if the next person that comes to administer the museum will have the motivation to do it well. I feel very sad about it, I feel sadness, because I put a lot of my strength and ideas into the museum. (JM 159-165)

He also showed a strong sense of personal responsibility towards his fellow community members.

I would like to leave a good image of my work to the community, I don't want to fail them. (JM170-171)

Having someone in charge of the museum that does show interest and vision to carry out new projects and develop new ideas to engage with the community is seen as an answer to the failures that working within the scheme of a committee changing every year or couple of years.

It does not matter if the committee changes every year, but there has to be someone in charge that has a feeling for the development of the museum, and I'm not talking about the whole community, but only the museum, the drive to bring the museum forward has to be present. We need a responsible administrator that is creating new projects and seeing how they develop, that is behind all the progress, taking care of it. We need, in the museum, an administrator that has the will to solve all the obstacles that we face every year. (FC, 151-157)

Despite the problems they have had to communicate with the scientists, secure funding and raise interest in the community, the museum is still functioning which means that the management has had a degree of success and that the community is still showing some interest in keeping the project running.

To my surprise the museum is very well conserved. I was being super negative and I thought that everyone was going to take their part and take it home and that the museum was going to be left empty, but no, and I'm glad it is there still. It seems that there are people that are interested and they still have it in very good condition. That is really admirable. (EM, 168-1173)

I felt it was not neglected, people take care of it, there is a committee in charge of the museum. (FF, 115-116)

Nonetheless, there is still plenty of room for improvement, given that, as we have seen in preceding sections of this chapter, participation of the community is low, there is a lack of involvement of the museum in daily life activities of the people of Frontera Corozal and the institution is seen only as a place for tourists to get information about the community. The key for the success of the project lies in the participation of the community, according to José Mendez.

We should involve other people apart from community members, but the rules say that only community members go to the assembly, so it's hard to involve them. Still I think we should inform the women and non-members of what we

do here and maybe like this they will realize the museum belongs to us all and will show interest in coming here and make it better. Maybe that is what is missing. Because they do not know the museum. They do not think about the role of the museum. And the museum brings us many things. (JM, 226-231)

7.4. Further indicators of social change

7.4.1. Restoring value to heritage and cultural identity

The museum's traditional role of conservation and exhibition of objects of the heritage of the community has been successfully carried out. Apart from the archaeological pieces and biological specimens on display, examples of ancient clay modelling and embroideries are on display in the museum.

When the museum was made it was important for us to rescue some of the works that Ch'ol people did here, like basketry, clay modelling and traditional embroidery. The only place where those works are being shown is the museum, people don't use it anymore. (...) Old people from the community remember they existed but if it was not a part of the patrimony displayed in the museum it would have been lost forever. (AD 244-252)

The conservation of these objects allows the people from Frontera Corozal to have a place to exhibit and conserve aspects of their patrimony, enabling "sense of pride" of their cultural identity and "sense of place" after a history of displacement.

The idea of the museum was to try to make them think differently. To make them see that conservation is important. (EM, 192-193)

So in a way it was an attempt to make them take appropriation of the space, to make them proud of what we are showing here because all visitors are going to see it. (AD, 146-148)

Florencio Cruz recognises the importance of the museum as a depository of information about the community.

Well I don't think it has been a fundamental axis of the improvement of the community, but it has been a space where we have much information about the community and its history. (FC, 271-273)

We have seen earlier that community participation was not symmetrical among community members, some people were more involved than others, notably assembly and committee members and communal authorities along with the children that took part in the workshops.

People that have worked at the museum, people that received the training, people that have been curious enough to come close to the museum, well for them yes, this has been a grain of sand. But, as I told you before there is no community vision. (AD, 219-222)

Thus, to some the museum has been a catalyst in changing attitudes towards conservation and towards the presence of foreigners in the community.

It depends on how their experiences have been, some people have had many benefits and opportunities so they see conservation as something positive and others think the contrary. (FF, 53-55)

The project has not generated the amount of participation that the researchers had envisaged at the beginning. However, they recognized that there have been some indications that attitudes towards the value of the museum and its role in the conservation and exhibition of their cultural and natural richness had changed.

I think there has been a change of vision in the community people that see that we have provided them with tools to evaluate their biological richness. More people are aware now that they are the ones in charge of taking care of a unique richness, and well I have seen many people express their approval to

this project stating that before this they did not know about all the plants and animals that inhabit their lands. (EM, 338-342)

Nonetheless, again the potential of the museum as an institution that could have a bigger impact in the community is recognized.

The museum has a lot of potential, not only in economic terms; it can also help us to feel more proud about our ancestors and our culture. I just hope that the next committee in charge of the museum shares this view, so we can keep up with projects and don't abandon the museum. (JM, 341-344)

According to Alma Delia de los Ríos, the results of the project in terms of reevaluation and conservation of their natural and cultural patrimony are only going to be visible in the long term.

I believe this is a long term result, a generation of people now has worked in the museum's construction, in setting up the Mayan pillars, in the biological collections; the kids that participated in the workshops. Somehow you would expect them to have a reflection in society in the future. Maybe it is too hard to change adults. So I think this is a long-term project that has to be accompanied with many other actions. (AD, 260-264)

Chapter VIII

The case studies under ecomuseum philosophy and practice

One of the research objects of this project was to explore the conception and practice of these museums in regards to ecomuseum philosophy. In this chapter I will relate the findings of the chapters six and seven with Corsane's indicators (2006a and 2006b).

As discussed in the methodology chapter (page 44) Corsane (2006a) proposes a list of indicators that encompasses elements of different lists of attributes of ecomuseum philosophy that other authors have described. (see Boylan, 1992; Corsane & Holleman, 1993; Hamrin & Hullander, 1995; Davis, 1999). After careful analysis of these lists I came to the conclusion that Corsane's provided the most thorough characterisation of ecomuseums. This list covers diverse tenets of ecomuseum philosophy and practice, such as their democratic management and participatory nature, their spatial arrangement, the conservation of tangible and intangible heritage, the inclusion of sustainable practices and their role in social change and community empowerment (Corsane, 2006b).

Through these indicators Corsane (2006a and 2006b) highlights practices that are central to ecomuseum philosophy and that can be used for their evaluation. Thus, by using the list of indicators that Corsane developed to characterise individual ecomuseums as a base for my analysis I will evaluate how strongly the community museums of San Juan Raya and Frontera Corozal fulfil the tenets of ecomuseum practice. I did not, however, use all the indicators that he proposes, but focused on the ones that are present in the museums I am analysing. I also changed some of the terminology he uses.⁸¹

In the following sections I will examine and compare the results of my analysis of both museums against my adapted list of Corsane's indicators.

⁸¹ A description of on how I adapted Corsane's list can be found in the methodology chapter (p. 40)

8.1 Evaluation in terms of ecomuseum tenets of the community museum of palaeontology of San Juan Raya and the community museum of Frontera Corozal

1. *An ecomuseum should be initiated and steered by local communities.*

In San Juan Raya, the idea of creating the museum as a means of developing alternative ways of exploiting their resources did not come from the community. This seems, in first instance, to fail to accomplish the first tenet in ecomuseum practice. It has to be said in this respect that in a community which lies in an isolated area and whose inhabitants present high levels of illiteracy and poverty, and certainly have few experiences of attendance to museums, it seems almost impossible for community members to originate a museum without outside intervention.

Nonetheless, participation has been successful and the people of the community have made the project their own and they manage it successfully. San Juan Raya is a community in which the land and all its resources are divided according to the number of households in the community. Decisions regarding communal property are taken in the general assembly, in which all households are represented. Since its creation the museum has been regarded as a communal asset and has been managed within the community's social organization.

The fact that the museum was created as an economic alternative for this impoverished community and that it is managed as a communal property has guaranteed the appropriation of the project. The museum has successfully responded to some of their needs and is currently steered by them, with only punctual collaborations by scientists and personnel of the Reserve.

The history of the community of Frontera Corozal is one of displacement, and of confrontation with the management of the Reserve. The initial idea of creating a museum came from community members as a mean of retaining the archaeological

pieces they had discovered in their lands. Government officials allowed community members to keep those pieces, rather than taking them to a museum in Mexico City, under the condition that they were conserved in a museum. Ever since its creation, the community museum of Frontera Corozal has been regarded as communal property and is managed by a committee, appointed by the community's assembly every year or two years. My results show that despite the initial interest that the community showed in funding a museum, participation has not been high and the appropriation process has not been successful. As is clear from the interviews the museum has faced financial difficulties, lack of participation and conflicts between researchers and community members.

Nonetheless the assembly has decided to keep it, has searched for funding and tried to maintain it in the best possible way. This is an indicator that the museum has successfully responded to some of their needs and is currently steered by them.

2. *The museum should encourage public participation from all the stakeholder and interest groups in all the decision-making processes and activities in a democratic manner.*

Numerous are the examples of successful museums that encourage participation of the community in the decision making processes and the creation of the content of the galleries. To mention one, the objects that form the collection of the Weardale Museum in North Pennines, England, and its display, have been built by community members in an amateur fashion. The galleries then represent what community members feel is interesting and unique about their community, the museum display then the community's "*cultural-touchstones*" (Davis, 2003:64). Unfortunately, both case studies shown have not been fully achieved.

As mentioned in the previous indicator the management of the museum of San Juan Raya is carried out in a democratic manner and all decisions regarding the administration of the museum are taken through direct vote in the assembly. People of the community, the group of researchers and administrative personnel of the reserve have all participated in the decision-making processes from the start of the museum. However, participation has not always been symmetrical and there have been some instances in which the community was not consulted by researchers, specifically in regards to the museographic script.

With the argument that members of the community are illiterate or have low schooling, scientists and museographers did not consult the people of San Juan Raya regarding the content of the galleries. The analysis of the interviews showed that traditional knowledge and other forms of intangible cultural heritage, such as expressions, traditions, skills, were regarded by outside participants as very important and valuable, however, there was never any intention to include any of them in the museographic script and priority was given to scientific knowledge.

The control over content of the gallery changed when the new museum was created. Due to organizational difficulties collaboration with outside professionals diminished and community members began to take decisions in respect to the content and design of the galleries by themselves. All decisions were taken in the general assembly in a democratic manner.

As with the case of San Juan Raya, the management of the museum of Frontera Corozal is achieved in a democratic manner by a committee, who is appointed through direct vote in the assembly. People from Frontera Corozal have collaborated with outside researchers at different stages of the project. However the community has not always had a participation in all of the museum's decisions.

The analysis of the interviews of Frontera Corozal demonstrates that overall the project sought a high degree of participation; and many key decisions included a consultation with community members. However, when it came to the content of

the galleries there was a lack of participation of the community. Once again here, there was not an intention to represent intangible cultural heritage in the galleries.

Researchers of the National University did not set up a methodology that would allow them to involve a large or a representative group of the community in the design of the gallery and restricted their collaboration to members of the assembly.

Furthermore, interviews proved that the relationship between outside participants and community members had been complicated throughout the development of the project, which obstructed a process of participation.

3. *The museum should place an emphasis on the processes of heritage management, rather than on heritage products for consumption.*

This indicator deals with an issue that could be difficult to achieve in developing countries. Conservation of the community's heritage needs to be favoured, however in marginalized and low-resource setting communities the search for economic improvement could hinder good heritage management. Clear policies of the use of heritage for tourism and consumption need to be put in place. A successful example is the Hoi An Ecomuseum in Vietnam, that has well-established policies of *"preservation, business management, construction and advertising"* (Galla, 2005:107) to regulate heritage management.

This indicator has only been fulfilled partially in the case of San Juan Raya, since the main motivation behind the creation of the museum was the idea of conserving the heritage through the creation of economic opportunities for the community. The museum of San Juan Raya was born out of the necessity to find alternative means of support of an impoverished community facing new regulations in a recently declared natural reserve, not as a means of conserving heritage for representation of the community. But by setting up the museum they are conserving their natural heritage, fossils and botanical sites.

Furthermore, during the conception and implementation of the project there has been no emphasis on encouraging the people of the community to reflect on their own heritage. The galleries do not dedicate space, for example, to the history of the community nor do they show cultural traits or traditions of the people of San Juan Raya. Nonetheless, the creation of the museum has encouraged the community to manage their own natural resources and as a consequence, a process of empowerment has taken place in the community. The analysis of the interviews showed that people of San Juan Raya are now more aware of the value of their heritage not only for tourist consumption, but also as patrimony of present and future generations. More importantly they are convinced that they have the means and power to organize themselves in order to manage their resources in a sustainable way.

In the case of Frontera Corozal, after analysis of the interviews I can conclude that this indicator has not been completely fulfilled. The museum has been created with the idea of conserving the heritage *in situ*, but the over-arching aim has been to bring alternative ways of support for the community. During the development of the museum, and throughout the collaboration with the researchers from the National University, there has not been an emphasis on encouraging the people of the community to reflect on their own heritage.

My interviews have shown that the value of the museum in Frontera Corozal is mainly acknowledged in terms of its tendency to augment the touristic activities provided by the community. The interviews make plain that the people of Frontera Corozal see the museum as a place for tourists, rather than themselves, to learn about their culture and their environment.

4. *Encourage collaboration with local craftspeople, artists, writers, actors and musicians.*

Ecomuseum theory aims at the conservation and representation of natural and cultural heritage through participation. The inclusion of local artists, can be a way

to achieve this. As an example I would like to mention the Fresnes ecomuseum, located in a Parisian suburb, that in 1991 had a participatory exhibition presenting the social problems of the area through the hip-hop movement (Delgado, 2001).

We have seen at the end of chapter six that the museum of San Juan Raya has had an impact in the creation of other activities in the community, Women are making and selling handmade beauty products with plants of the region, moreover a growing number of women take part in the making and selling of handcrafts.

While these activities have developed as a consequence of the existence of the museum, an actual collaboration between these local craftspeople and the museum has not been encouraged. As mentioned in previous paragraphs traditional knowledge and cultural traits of the community were not included in the museographic script of the museum. This lack in collaboration meant that an opportunity was missed to get community members working alongside museum professionals in the design of the galleries.

However, things changed as the new museum developed and took shape. The community took decisions regarding gallery content and decided to employ a local painter to elaborate a mural on dinosaurs (Fig 12, p.170) to adorn the palaeontology gallery. Thus, it can be concluded that collaboration with a local artist was only achieved when community members began to make decisions regarding the content and design of the galleries. This mural was the source of debate among scientists given that it has no scientific accuracy. The team of researchers agreed that it is not adequate for the gallery; however, they recognized the value of the mural as the only artistic representation of the paleontological past of the area by a local artist.

On the other hand, in the community of Frontera Corozal, the museum's traditional role of conservation and exhibition of objects has been successfully carried out. As well as the archaeological pieces and biological specimens on display, examples of ancient clay modelling and embroideries that are no longer in use have been rescued and are now on display in the museum.

As a means of economical income, people in the community are involved in the elaboration and commercialization of handicrafts for tourism consumption. Some of these handicrafts have been chosen by outside researchers in the creation of the galleries and are shown as examples of the Ch'ol culture.

However, there has not been a process of encouragement of collaboration between local artistic talent and the museum. This distances the museum from ecomuseum philosophy and situates it closer to traditional museographic practices in which local or indigenous knowledge is managed by outsiders.

5. *Depend on substantial active voluntary efforts by local stakeholders.*

The museum of Frontera Corozal has been created and developed through voluntary efforts from both local and foreign stakeholders. From its conception, none of the parties involved, whether they be researchers, reserve management, community people or museum professionals, have received any remuneration.

Furthermore, the museum is run as any other communal property of the community and the committee that manages it works also in a voluntary basis. San Juan Raya is a community that is organized around the rule that all land and resources are divided equally among households. The main governing body is the general assembly, in which one person represents each household. Decisions regarding communal resources and common properties, such as the museum, are taken in this assembly. The museum is run by a committee that is appointed as well. Members of this committee do not receive any payment for their work.

The museum of Frontera Corozal has been financed with government funds and has been created and developed by voluntary efforts. From the beginning of the project, there has been no remuneration for the various stakeholders involved – the researchers, the community members and the museum professionals. Furthermore, the museum is run as any other communal property of the community, and the committee that manages it works also in a voluntary basis. All decisions regarding the museum, as it is seen as a communal resource and

common property, are taken in this assembly. All administrative positions are appointed as well in the assembly every year or two years and people in these positions do not receive any payment for their work.

Arising from a fraught history of relationships with outsiders, with private enterprises and with government officials, the community members of Frontera Corozal have not always accepted intervention from the wider world. The interviews show that this attitude extends as well, and in full measure, to the researchers of the University. On the one hand they accepted their help, but on the other one they were very careful that the researchers do not take advantage of them and they do not trust them entirely. Their collaboration with community members has at times been difficult and their work has not always been appreciated.

6. *The museum should focus on local identity and a “sense of place”.*

Davis (2011) argues that sense and spirit of place are one of the main pillars of ecomuseology. And empirical work has proven that approaches such as ecomuseums that promote and conserve tangible and intangible heritage are crucial in defining local identity, distinctiveness, spirit and sense of place (Hawke, 2010)

Although the community museum of San Juan Raya focuses on the natural and cultural heritage of the area, the exclusion of the “vision of the world” of the community hinders its potential role as a place where people of San Juan Raya can reflect on their local identity.

However, the development of the project was collaborative in many stages and decisions were taken by public vote in the assembly and the community has taken over the museum and made it their own.

As seen in the analysis chapter it is through the guided tours that the community has been able to include their traditional knowledge to visitors. As a result the environment, which includes all fossil and archaeological pieces, as well as the

biodiversity of their lands, is seen now as a patrimony that needs conserving. As shown in the interviews, the museum has also been regarded as a place that allows them to rescue their culture, their identity and to exhibit it to visitors. The sense of place and the recognition of the value of their resources have made the people of San Juan Raya guardians of their own territory.

The museum's galleries focus on the natural and cultural heritage of the area. One of the galleries illustrates the biodiversity to be found in the area, whereas the second one narrates the story of the creation of the community, its social structure and traditions.

Although some aspects of traditional knowledge and cultural practices are present in the galleries, it is significant that they were planned and designed by outside collaborators, community members were given no opportunity to provide an opinion on how the galleries should be designed, nor asked for their views on what ideas should be represented there. Thus, the museum has not become a place that invites them to reflect on their local identity or a space in which the community can project their "view of the world"

The museum has an instrumental aspect: it is regarded, by community members, as a tool allowing them to keep archaeological pieces of their Mayan ancestors *in situ* and protect them from being exploited by outsiders. In this sense, the museum has helped to make the people of Frontera Corozal guardians of their own heritage.

7. *Encompass a "geographical" territory, which can be determined by different shared characteristics.*

Whereas one of the distinctive features of traditional museums are its walls that allow the visitor to withdraw from the world (Arnold, 2006) the ecomuseum model goes out of the museum's galleries and adapts to many different environments. The "geographical" territory of an ecomuseum could be a south centre district of Montreal, Canada (Rivard, 2001), a whole peninsula in Japan

(Davis, 2004), 12 villages in the Liuzhi Prefecture in China (Corsane, *et al.*, 2009) or a small rope-making parish in the south of Turin, Italy (Corsane, *et al.*, 2007).

The valley of Tehuacán-Cuicatlán, where San Juan Raya is located, is an important region for biodiversity in the country as it encompasses around 10% of the flora of the country (Toledo, 1985). Compared to other similar ecosystems in the country, it occupies the first place in plant diversity and endemism of arid and semi arid zones (Méndez-Larios *et al.*, 2004) and it is one of the zones with the highest concentration of columnar cacti in the world (SEMARNAT, CONANP, 2013).

Moreover, in terms of interaction between man and nature this area holds a very important significance in the history of domestication of maize and other species typical of Mesoamerican cultures. In addition, the lands of the community of San Juan Raya hold one of the most important fossil record of the cretaceous in Mexico.

The territory has always been at the centre stage of the creation of the museum. It is precisely the geological, anthropological and paleontological characteristics of the area that make the community so distinct and constitute the central theme of the museum. The interest of tourists towards this area comes also from the uniqueness of the place.

As mentioned before, the community of Frontera Corozal is in the reserve of Montes Azules, which is within the Lacandon Jungle. This is a strategic area for Mexico for its geographical position and the natural and cultural resources that it holds. The greater Lacandon region, is Mexico's most biologically diverse region (Mendoza & Dirzo, 1999). Its high biological diversity and great environmental heterogeneity are expressed in an enormous variety of species, communities and ecosystems (Figueroa & Bonfil, 2011)

The distinct geographical, biological, ethnic and anthropological characteristics of the area create the thematic in which the museum is based upon. It is precisely its territory has always been at the centre stage of the creation of the museum.

8. *Cover both spatial and temporal aspects, where, in relation to the temporal, it looks at continuity and change over time rather than simply trying to freeze things in time.*

Ecomuseum theory

In referring to both the geography and the geological, paleontological and anthropological history of the community and the geographical area it covers the museum of San Juan Raya exhibits both spatial and temporal aspects of the territory. However, the museum only covers these aspects of the territory in regards to its natural characteristics, there is no mention of the community's historical relationship with its territory and environment.

As identified in the interviews the lack of involvement of the community members in the creation of the gallery left them without the possibility to reflect how the community is today and how they relate to their past. Thus, the galleries in the museum do not show continuity over time, but focus on several different moments in the natural history of the territory, reflected in the fossil record.

In the case of the museum of Frontera Corozal, the museum covers both spatial and temporal aspects of the territory, by referring to on the one hand the biological diversity and the geography of the territory, and on the other to the Mayan inheritance of the Ch'ol people. However, as identified in the interviews the lack of involvement of the community members in the content of the galleries left them without the possibility to reflect how the community sees itself today and how they relate to their past.

9. *Takes the form of a "fragmented museum", consisting of a network with a hub and antennae of different buildings and sites.*

Hamrin and Hulander (1995) have suggested that an ecomuseum should physically cover a large area connected through different hubs. One of the best

known examples is the Ekomuseum Bergslagen in Sweden, a network of more than fifty cultural sites vast in a vast open-air museum that covers 750 square kilometres (Davis, 2005).

As established by my interviews, the museum of San Juan Raya consists not only of the building in which the fossils and archaeological pieces are exhibited; the museum extends beyond the gallery walls to sites spread in the territory of the community. The community has designed and managed five different guided tours to key places in the area. Five touristic walks have been designed in which local people guide visitors to see the fossils *in situ* and to admire the biodiversity in flora and fauna that the region possesses. The existence of these guided tours coincides with ecomuseum philosophy, which states that it is imperative to expand the museum outside the gallery space.

As recognized in the interviews, the touristic paths respond to an important process of empowerment, since it was the community members who decided to take control of the tours that reserve personnel were performing in their lands.

On the other hand, the museum of Frontera Corozal is not made up of a network of different sites, but of one only. All the different galleries are located in individual huts with the botanical garden extending to one side of the area and the restaurant to the other side. The only extension of the museum outside the gallery space is the botanical garden, however, as the interviews reveal, the community members have not maintained it and it is now derelict.

In this sense, the museum does not fulfil ecomuseum practice, corresponding more to a traditional museography that does not attempt to make a physical connection between the content of the gallery and the community in which it is located.

10. *Promotes preservation, conservation and safeguarding of heritage resources in situ.*

In San Juan Raya, it is precisely the existence of the guided tours that allow visitors to see the fossils at the sites of their discovery. This highlights the importance of preservation of the heritage resources of the community *in situ*. Furthermore, the creation and successful management of the museum has allowed the community to keep their fossils in the community, which otherwise would have been taken to a museum or research institution in Mexico City.

According to researchers and community members the value of the museum is that, even if the idea did not come from them initially, the community has been consulted and the project was not imposed on them, which has permitted the community to manage and to claim control of their own resources. Commitment to develop the project and motivation to improve it are present and the importance of having the museum in economical and conservation terms is acknowledged both by outsiders and community members.

On the contrary, the motivation of the community of Frontera Corozal to avoid the National Anthropology Museum in Mexico City to take away the Mayan steles the factor that initiated the museum in this community. The success of the community in conserving these archaeological pieces in the territory promotes preservation of the heritage resources *in situ*.

Despite the fact that the museum has not been appropriated entirely by the community and therefore it has not made such a deep impact, the analysis of the interviews has shown that the museum is seen as an important place where information about the community can be communicated to visitors.

Thus, despite all the difficulties that the project has encountered, the potential that it represents as tool to promote the Ch'ol culture and the environment in which they inhabit is recognized both by outsiders and inhabitants of Frontera Corozal.

11. *Gives equal attention to immovable and movable tangible material culture, and to intangible heritage resources.*

In the case of the museum of San Juan Raya, the museum's attention is given to the tangible heritage, more specifically the fossil collection and the natural environment in which the community is settled. Cultural practices, expressions, knowledge and skills of members of the community have no representation inside the galleries and it is only through oral narrations during the guided tours that community members have the opportunity to communicate their local knowledge to visitors. Thus, the intangible cultural heritage is subject to attention and conservation only as a secondary effect of the museum.

The museum of Frontera Corozal exhibits predominantly aspects of tangible heritage of the community and focuses on the exhibition of archaeological pieces, handicrafts and biological specimens. There is a brief mention to the intangible value of resources, specifically in terms of biodiversity and the Mayan heritage of the community in the panels of the gallery and the importance of traditional knowledge.

However, as it was described in the analysis the representation of both movable and immovable tangible and intangible heritage has been developed by outside collaborators and does not show the community's point of view. The practices and representations, knowledge and traditions of the community have been left out of process of creation of the museum.

12. Stimulates sustainable development and use of resources.

Ecomuseums in the developing world have the challenge to encourage wellbeing and improvement of the communities while guaranteeing a sustainable use of resources. As a successful example of best practice in nature conservation, heritage management, promotion of responsible tourism and sustainable development we can cite the experience of the Iwokrama International Centre for Rainforest Conservation and Development in Guyana, South America (Corsane, 2008)

As recognized in the interviews, the museum of San Juan Raya has been an important factor in the economic wellbeing of the community, through the

development of sustainable alternatives for the use of local resources. Furthermore, the existence of the museum has allowed the inhabitants of San Juan Raya to use their resources in a way that allows conservation of the environment.

The biological and paleontological characteristics that this region possesses gives it a great potential for developing tourism related activities, representing these a strong alternative for the inhabitants of the reserve to diversify their economic income and to balance conservation interests and sustainable development. Statements from community members show that they have realized that there is a bigger and longer-lasting benefit of exhibiting the fossils than of exchanging them for food or money.

The communication process with scientists has provided them with scientific knowledge to complement their traditional knowledge in regards to their natural resources. As a consequence, environmental awareness has increased in the population. My analysis has shown that members of the community take care of their resources and manage them in accordance with the regulations imposed by the reserve.

The museum of Frontera Corozal, however, runs as a promoter of the value of the natural resources of the area, which is particularly important given the history of displacement and recent creation of the community. However the lack of participation in the community has hindered the role of the museum in creation of environmental awareness within the community members and its information is mainly directed towards outside visitors.

The impact of the museum, as an economic force is mainly related to issues of ecotourism. The contribution of the museum towards sustainable development is therefore allowing community members to have economical alternatives that alleviate some pressure on the direct use of natural resources. However, it is evident that even if these activities have the advantage to minimize the direct pressure on natural resources and can provide an alternative means of support,

they present the disadvantage that their economic benefit is not unevenly distributed and could aggravate social disparities (Orlove & Brush, 1996).

Unless the social and economical stratification of Frontera Corozal is addressed, inclusive sustainable policies, such as initiatives of community based conservation, which have been proven to work in many other parts of the developing world (Western *et al.*, 1994; Orlove & Brush, 1996; Kaus, 1993; Hill & Press, 1994) will be very hard to establish.

13. Allows for social change, empowerment and development for a better future.

Empowerment is a key feature of ecomuseology since it emerged in the early 70s (Davis, 2011). As an example I would like to refer briefly to the Chinese ecomuseums, that have been identified as major actors in the promotion of sustainable development of indigenous people of the poor rural areas of the country (Davis, 2007). For example, the Soga Ecomuseum, located in the village of Longga, home to the Qing Miao people aimed at improving the living standards of the population (Davis, 2007).

On top of the direct economic benefits that the museum of San Juan Raya has brought to the community, and that have been previously discussed in this investigation, the creation of the museum, as seen in the interview analysis, has also served as a trigger of other initiatives in the community, such as the creation of an NGO of natural medicines by the women of San Juan Raya, the realization of workshops to train new tour guides. The fact that community members have successfully taken over the management of the museum has provided them the tools to manage and communicate their natural and cultural heritage. Carrying the responsibility of the conservation of their own heritage contributes to people's empowerment (Alsop, 2006).

Finally as recognized in the analysis of the interviews the museum not only has been a factor in environmental awareness, but it has also had an impact in social

dynamics, there has been a change in the gender-related attitudes and it has served as a catalyst for other projects inside and outside of the community which have all contributed to the improvement of the living conditions of the people of San Juan Raya.

The museum of Frontera Corozal is a positive initiative that has allowed the community to keep its archaeological pieces and to save and exhibit its natural and cultural patrimony. It has also allowed the community to have a wider diversity of economic activities, which meant that the direct impact on the jungle resources was diminished. However, the lack of participation decreases its importance as an improvement tool for the future of the community. All interviewees concurred that the museum has not had a significant impact in the community in terms of improving their life conditions nor has it been a generator of new projects in the community or in nearby towns.

This is particularly paradoxical given that the museum was a proposal that was born from the community in the first place. After initial interest in setting up the museum the community seems to have lost interest in it or motivation to improve it. The community seems to not have taken over the museum as their own

One of the only impacts that the museum has had in terms of improvement of the living conditions of the community is in terms of tourism attraction and thus, it has helped to sustain a diversity of economic activities, which contributed to an improvement on the conservation of the area.

In terms of empowerment, the museum was successfully created as a strategy of resistance of the communities to government decisions regarding their heritage. The creation of the museum has provided them with the tools to safeguard their natural and cultural heritage. By managing the museum, the community is carrying the responsibility of the conservation of their heritage, which, at a communal level can contribute to people's empowerment (Alsop, 2006).

14. *Encourages an ongoing programme of documentation of past and present life and people's interactions with all environmental factors (including physical, economic, social, cultural and political).*

In San Juan Rayas' museum there is no ongoing programme of documentation of the history of the community. The content of the galleries has been decided by the team of Dr Valiente and museographers and no emphasis has been given to the present life of the community and its interactions with its surrounding environment. As it was mentioned before, the guided tours represent the only opportunity in which community members can express their traditional knowledge and practices to their visitors.

As described in chapter 7 (page 281), the museum of Frontera Corozal has a gallery dedicated to the history of the community and the cultural patrimony of the Ch'ol people and another one dedicated to the biodiversity of the area. The galleries have remained unchanged since the museum opened and there is no project or programme of further documentation. This again can be related to an absence of collaboration with community members in the decision-making process of the galleries' content. The museologists and biologists carried out the entire the design of the galleries and took all decisions regarding the information. The community only participated in the approval of the project. Thus, I can conclude that the museum has not been a space in which the community can provide its own view of the world and reflect on their past and the influence it has in its present life.

15. *Promotes research at a number of levels –from the research and understanding of local “specialists” to research by academics.*

Numerous biological, geological and paleontological research projects have been carried out in the region of San Juan Raya ⁸² and the involvement of researchers with the community made known the scientific importance of the area. My research has shown that a communication process between scientists and community members has allowed people of San Juan Raya to acquire scientific knowledge of their environment, which is then passed on to visitors through the guided tours.

However the museum does not promote research in any way. The fossil collection in the museum is not used for any scientific research, nor is the collection of anthropological pieces.

The museum of Frontera Corozal does not promote any research, as none of the objects in it has been subject of further investigation. Regarding the creation of scientific knowledge, the Lacandon jungle represents an area of high interest for academic research and plenty of biological, and archaeological research has been carried out in the region. It was precisely the scientific value that this area has one of the reasons behind the involvement of researchers from the National University with the community in the setting up and posterior refurbishment of the galleries. One of their objectives was to address the lack of knowledge of the biological diversity of the area and the need to show its value to the world. In this sense, the creation of the museum, responded to the need to communicate this newly acquired knowledge of the region as well as previous scientific data that existed, both to tourists and community people.

16. Attempts to illustrate connections between technology/individual, nature/culture, and past/present.

It was never the intention, as identified in the interviews, to illustrate these connections in the museographic script of the galleries in the museum of San Juan Raya. However, the fact that this museum aims to show the objects in close

⁸² A list of some of the articles published with studies on the area by Dr Valiente's team is available from: http://www.ecologia.unam.mx/laboratorios/comunidades/pub.htm#rev_int (Accessed Nov 2nd 2012).

proximity, or even *in situ*, to the place where they were found, opposes traditional museography, which extracts objects from the “real world” and reinterprets them in the gallery space, where they are reinterpreted.

Because of the intimacy achieved by the San Juan museum, the connection between human being and nature and between present and past is well illustrated. Moreover, through the traditional knowledge and scientific facts that guides pass on to the visitors during the tours, they can have a better insight into the connections that there are between inhabitants of San Juan Raya and their environment.

In the case of Frontera Corozal, as recognized in the interviews, researchers involved in the museum did have the intentions of representing in the galleries the connection between natural and cultural heritage in the community. Despite the fact that the museum shows the objects inside the gallery and the museum is not set up, as ecomuseum practice suggests, in several sites within the territory, it shows the objects in close proximity to the place where they were found. This helps to illustrate the connection there is between this community and the environment that surrounds it and between the present inhabitants of the Lacandon jungle and its Mayan predecessors. Thus, even if the museography does not completely break away from traditional practices it succeeds in showing objects regarding the nature and culture and past and present of the Ch`ol community *in situ*.

17. Provide for an intersection between heritage and responsible tourism.

The museum of San Juan Raya has given community members the opportunity to manage their own heritage and to diversify their economic activities towards tourism. As it was mentioned in earlier chapters, tourism is not a reliable source of a sustainable use of resources unless its benefits reach the population in an equal manner and it is regulated so as to not cause any damage to the culture or environment of the place (Orlove & Brush, 1996).

In the case of San Juan Raya, the “communal property” scheme that the community follows has been beneficial to the equal distribution of the proceedings of the museum. Ecotourism has thus become a viable sustainable alternative for the management of their natural resources.

Moreover, given that the tourist attraction relies on the conservation of their natural and cultural heritage the people of the community are very aware that they need to maintain their lands as conserved as possible in order to keep tourists visiting. Thus, they have stopped some practices that are damaging to the environment, such as herding of goats, cutting of wood for fire.

On the other hand, as ecotourism flourishes it is imperative to minimize the impact that an increase in human activity can have in the environment. In this respect, my interviews have shown that the people of San Juan Raya make special emphasis to communicate all visitors on the importance of keeping their land free from rubbish and they patrol their territory to avoid illegal looting of fossils and plants.

According to my results, the museum of Frontera Corozal is regarded, both by researchers and community members an important factor in showcasing biodiversity to visitors. The existence of the museum has provided the community with a tool to manage their own tangible heritage and diversify their economic activities towards tourism. The community knows that their attractiveness to tourism relies on their Mayan heritage and the rich biodiversity of the jungle they inhabit and are very aware that they need to maintain their lands as conserved as possible in order to keep tourist flow. Some practices that are damaging to the environment have stopped and the community has taken some steps to the conservation of key species, such as the declaration of a communal reserve to protect *Lacandonia schismatica*.

However, the community has not showed interest in the development of other activities of responsible tourism. This probably lies in the fact that previous tourism activities have not been beneficial to the whole of the population in an equal way.

As reported in my analysis, ecotourism activities face two challenges in the area, firstly the social stratification of the community, which prevents an equal access to the benefits of the development of ecotourism and has a negative impact in true commitment towards conservation strategies. Secondly, the present corruption that prevails in the area, both from governmental institutions to other associations, enterprises and NGOs that reach to the community with touristic developments moved more by economic interests, than for the sake of conservation have left the community reluctant to participate in such kinds of activities.

18. Bring benefits to local communities, for example, a sense of pride, regeneration and/or economic income.

The benefits of the museum of Palaeontology of San Juan Raya are numerous and play at different levels. The most evident is the economical. However the museum has also helped with the conservation through the promotion of sustainable use of the resources. Given that the tourism is attracted by the fossil collection and the biodiversity of their lands, the inhabitants of San Juan Raya have put emphasis in the conservation of their resources.

The analysis of the interviews showed that the recognition that the biodiversity and the fossil records are valuable and attractive to people outside their community has generated a sense of pride in the population. This has lead to a greater appreciation and, thus conservation, of their resources. This has been mainly achieved through a process of communication with the researchers and personnel of the Reserve. My findings show that the people of San Juan Raya feel proud to be the owners of lands that possess such great richness.

Several community members mentioned the fact that younger generations have more knowledge, are more aware and more interested in conserving their environment. Many of them are actively involved in the museum as guides.

The notion that conservation is important and brings many advantages is growing. The creation of the museum has been a very important factor in this change and has acted as a driving force for many other projects that allow them to sustainably exploit their resources. The sustainability of the project lies in the fact that the community is making profit with their resources and are simultaneously taking care of it.

The benefits that the museum brings to the community of Frontera Corozal are diverse. On the one hand the museum was created by the community itself, which allowed them to keep their archaeological pieces to exhibit them. This has helped to contribute to the sense of pride that the community has in regards to their Mayan inheritance. Regarding the history of displacement of the community, the recognition of a sense of place and pride in their territory and cultural heritage is beneficial for the community. On the other hand the museum has helped to create a greater diversity of economical activities, which puts less pressure on the direct exploitation of natural resources. Given that tourism is attracted by Mayan heritage and the biodiversity of their lands, the inhabitants of Frontera Corozal have put emphasis in the safeguarding of their resources. Through the interest that others show in what they have, there has been an increase in the sense of pride in the people of the community, they feel proud to be the owners of their lands. In economic terms, the value of tourism activities is, however, not significant, given that the museum does not represent an important generator of economical benefit and due to the previously mentioned difficulties that sustainable tourism faces in this community.

8.2. Summary of analysis

Community museum of palaeontology of San Juan Raya

Summarizing, we can recognize from the interviews that the community museum of San Juan Raya does fulfil the majority of Corsane's indicators, most notably in regards to conservation of heritage *in situ*, empowerment of the community, sense of pride, responsible tourism, economic benefit and social change. The museum of San Juan Raya also accomplishes the geographical setting that an ecomuseum should have.

On the other hand, there are still some elements of ecomuseum philosophy and practice that are absent, distinctly the reflection of the community on their own heritage, the representation of their intangible cultural heritage and local identity, and the inclusion of local craftspeople. All these deficiencies can be linked to the fact that during the conception of the museum there was never an intention on portraying the community's culture or "view of the world" and therefore, traditional knowledge was not taken into account in the development of gallery content. There is no mention of intangible cultural heritage in the stated aims of the museum and therefore it has not been an important part of the project. As mentioned before, the intangible cultural heritage of the community is only present in the museum through the information on traditional knowledge that the community members decide to share with the tourists. There has not been a process of self reflection on the identity of the community. The communication process between community members and outside collaborators was not a dialogue, but involved the researchers taking all the decisions regarding content and assigned community members to provide only physical help in the development of the gallery.

We can conclude therefore that although the lack of community involvement at the level of content design had quite a widespread effect, the museum presents a positive account of ecomuseum tenets.

Community museum of Frontera Corozal

In summary, as my analysis presented the community museum of Frontera Corozal only fulfils some of Corsane's indicators, however many others are not successfully accomplished. The museum of Frontera Corozal fulfils ecomuseum tenets markedly in regards to conservation of heritage in situ, management of heritage by the community and representation of cultural tangible heritage of the community. My interviews show also that the museum has also had an impact in building a "sense of pride" in the community.

However, the lack of interest in participation and motivation to improve seems to have had a widespread effect in the success of the museum. There are important elements of ecomuseum philosophy and practice that are notably absent, especially the reflection of the community on their own intangible heritage, a good communication process within all stakeholders, collaboration with local artists, environmental awareness, space for local identity and an impact in social change and empowerment processes. The museum also accomplishes some of the geographical characteristics that an ecomuseum should have, however it fails to bring the museum outside of the gallery space.

As it is the case with the museum of San Juan Raya, traditional knowledge, practices, representations, expressions and skills of the community members have been left out of the development of gallery content. There is no mention of intangible cultural heritage in the stated aims of the museum and therefore, issues such as selfreflection of the community and creation of identity have not been an important part of the project.

Some of these absences of ecomuseum practice can be linked to the difficulties that the community has faced in its recent history and the fact that their relationship with outsiders has been riddled with complications and contradictions. Furthermore, my analysis shows that scientists and community members mistrust each other and had difficulties reaching agreements. The collaboration between outside researchers and community members was often problematic. Other

absences of ecomuseum philosophy can be also explained by the fact that the community was not given the opportunity to use the museum as a tool to communicate their “view of the world”. The inclusion of intangible cultural heritage could have been especially beneficial to the community of Frontera Corozal, given their recent history.

Chapter IX

Concluding discussion

The preceding chapters merged theoretical arguments with findings from my empirical work. In this final chapter I continue to reflect on the outcomes and draw the final conclusions on this research. Specifically I will return to the research questions, note the broader significances of my studies and finally consider next steps in this field of study.

When I described the theoretical framework and methodology for this research I also laid out my research questions (page 18). Summarizing, the general aim of this research was to answer how fully the case studies fulfil their stated aims in terms of conservation of the environmental and cultural heritage of these two communities - to examine, in other words how well their philosophy and practice performed in terms of the museums' own objectives. As part of this I sought to find out if these museums were indeed contributing factors to the improvement of the communities' social and economic circumstances.

The literature review attempted to fill out the many issues that provide the background to this study. My venture to understand the different factors led me to explore different fields of study that I divided into three overarching chapters. Firstly, I gave a brief historical account of museum practice and explored also how those museographic practices shaped cultural conventions in newly conquered colonies. In addition, I drew on the way traditions in museology and museography have changed over time so as to encourage public participation. Secondly, I examined the rise of the environmentalist movement in the world and focused on conservation and sustainable development practices in Latin America. Additionally, I explored the impact that this social, economic and political movement has had on museum practice, and referred particularly to the case of ecomuseums. Finally, I looked into the complex socioeconomic parameters of Mexican society, and showed the marginalized situation of indigenous communities, and their complex interactions with the government. I focused then

on the history of museums in Mexico and showed how traditional museum practices imported from the European tradition did not give a voice to indigenous but continued a colonialist discourse. I explained how new movements in museology seek to distance itself from the ideas of the traditional museum, preferring - in the case of eco-museums - to include marginal cultures in the decision-making processes.

My literature review aims to bring together the background information necessary for understanding my case studies. However, the heart of my study is a series of interviews that I carried out during visits to the communities, and to researchers of the National University in Mexico City. Analysis of those results settles into a series of topics that were grouped into topics, and then elaborated in chapters six and seven.

Chapters six and seven trace out the details of many local events, thoughts and actions. The chapters aim also to 'bring to life' for the reader, the many forces at play in the development of these two museums.

It is the task of chapter eight to gauge the significance of the descriptions contained in chapters six and seven. In particular chapter eight judges the overall success of the museums by systematically comparing the trajectories of each museum's development with Corsane's indicators (2006a and 2006b). This supervening analysis, I argue, shows that the museum of San Juan Raya has fulfilled these ecomuseum tenets more successfully than has the museum of Frontera Corozal. This differential emerges mostly by examining the museum's processes of appropriation; and the value of the museums in encouraging the conservation of the environment; the accrual of social progress; and the generation of further projects of sustainable development.

9.1. Reflection on methodology and return to the research questions

Since the first stages of this research I was determined to research the processes and interactions that are operating in the background of ecomuseums and to evaluate them from a social point of view. I am confident to conclude that my choice of theoretical frameworks was adequate, since they grant me answers to my research questions.

Open ended interviews allowed me to investigate the development of the museum and communication processes, but they have also allowed me to look into attitudes of the different groups involved, personal experiences and feelings. Ethnographic observations have helped me provide a framework to the discourse that was being delivered through the interviews. By spending time in the community I could observe the community's daily life, cultural habits, social dynamics and understanding of the world.

I decided to base the analysis of data mainly in two methods, grounded theory and ecomuseum evaluation through Corsane's indicators. Grounded theory provided an organized and systematic way of exploring the complex and intricate issues that arose in the development of such projects. An exhaustive and iterative coding process following this methodological framework proved to be a very efficient way to organize a vast amount of data and to identify and analyse the issues that formed the coding categories.

After the lengthy analysis and coding of the interviews the evaluation of the museum with reference to Corsane's indicators (2006a) helped me to center the issues I had extracted from the interviews within ecomuseum theory and practice,

The research questions that I set to answer in this research have been guiding my investigation in terms of structure and focus. Yet, as the methodology I decided to use gave opportunity for other subjects and questions to arise from the data my discussion of these questions in the analysis chapters has been brief. Thus, at this point, I return to them in a more focused way and aim to reflect on how they have been answered.

9.1.1. Achievement of the museums' stated aims

The first question I addressed in this research was: How fully do these community museums fulfil their aims in terms of conservation, documentation and exhibition of the environment?

My first research question aimed at seeing how the community museums were fulfilling the objectives articulated during the creation of the project. In the next two sections, using the findings of my interviews, I will draw final conclusions on how fully they accomplished their aims.

The Community Museum of Palaeontology of San Juan Raya

In the community museum of San Juan Raya, the goals that were set on establishment of the project can be summarized thus⁸³:

1. *The museum should act as an instrument by which the community manages its natural patrimony.*

The illegal status of the fossil exchange arising on the establishment of the reserve forced the people to change their economic activities and living habits. The idea of building a museum to indirectly but legally exploit their fossils came from people outside the community. However, my findings show that although the initiative was not born from within the community there has been an appropriation process. This has guaranteed the success of the museum. It is now a project owned by local people and they manage it according to the decisions taken in the assembly. I found nevertheless they still have advice and timely help from the researchers and personnel of the Reserve. The creation of a committee in charge of the issues related to the museum has reinforced the participation of the community in the project. The role of the museum as a community-organized tool for the proper management of their heritage has been successfully achieved.

⁸³ A full transcription of the stated aims of both museums from official documents can be found in chapter 1, page 32.

2. *The museum should facilitate education and training for the community in the subjects of biology of the region and its fossil deposits, with the aim of aiding conservation and the communication of cultural and natural heritage.*

Through the statements of the interviews and my observations in the field it is clear that the existence of the museum has contributed to an increased knowledge in respect to the biological value of the fossils and plants that the community possess.

Due to the success of the museum tourism has flourished in the area and this has brought many economical benefits.⁸⁴ Young people of the community⁸⁵ are working as guides for the tourist trails, enabling visitors to see fossils in situ and to admire the biodiversity of the area. A very important consequence of this is that young people have the opportunity to work, reducing pressure to migrate to the United States or other parts of Mexico. This involvement of young adults and teenagers, not only has helped them to secure employment but has given them knowledge about their lands that otherwise, given the feeble possibilities of access to formal education, would not be possible. The knowledge exchange with researchers constitutes then an important element in informal education. This is an important contribution to a community that has high levels of illiteracy.

It has been evident from the interviews that the creation of the museum facilitated communication between external researchers and San Juan Raya community members. Scientists have given workshops and training to people in the community about the geological and biological history of the area. The aim is to provide them with more knowledge about their region, which in turn helps them to manage their museum more successfully. Community members agree that the

⁸⁴ A quantitative study on the economical benefits that the flow of tourism has brought to the area due to the existence of the museum is yet to be made. The absence of data makes this study a first attempt in looking into the economic benefits that the museum has had in the community.

⁸⁵ At the time of my second visit to the community, I was informed by Minerva Hernández, museum guide and receptionist, that there were approximately 30 children, teenagers and young adults working as museum guides. In a community with only little over 200 people this number is significant.

environmental knowledge brought in by outside experts has led to an increment of environmental awareness amongst the population.

Juan Reyes Barragán expressed that informal education has been an important factor in the revalorization of the importance of the biodiversity of their lands:

And then they started to explain us more about the importance of Cactus plants and the importance of this land and why it had been declared a Reserve. So we started to understand all the beauty that exists in this landscape. (JRB, 45-48)

Therefore, in relation to the role of the museum as a place where education and training impacts positively on the management of natural resources of the territory, it is fair to say that the museum has achieved this objective.

- 3. It should encourage a better use of their resources, in order to achieve sustainability and improve the livelihood of the community.*

Regarding the issue of environmental conservation, the museum has influenced the community in several ways. Firstly, it has provided people with ways of earning a living without damaging the environment, which indirectly helps conservation. Secondly, the museum not only has generated resources and work opportunities itself, but has served as a driving force for other projects of sustainable development in the community. The sustainability of the project lies in the fact that the community is profiting economically from their natural resources and are simultaneously taking care of those natural resources

Thirdly, through the training of the guides and the workshops provided by scientists and personnel of the reserve, awareness of the importance of conservation is growing in the community. Children and adults alike are more alert of the importance of the conservation of their lands for their own wellbeing. This awareness is triggered in part by the necessity to keep their lands “beautiful” for

the tourists, yet there is also the notion, among the community, that their lands represent their patrimony, and that it is their duty to take care of it.

Thus, regarding the third objective, which refers to the museum as a tool for sustainable development and the improvement of the living conditions of the inhabitants of the community, I conclude that the museum has fulfilled this goal.

The Community Museum of Frontera Corozal

In the community of Frontera Corozal, the creation of the museum was conceived and developed with the following goals:

- 1. The museum should contribute to the preservation, rescue and communication of the culture of the communities of the region.*

My findings showed that the idea of developing a museum was a response to the need to secure the patrimony of the community, in particular the archaeological sites. Despite all the difficulties that the project has encountered, centering on the involvement and appropriation of the community in the museum, it has a secure role as an institution preserving and communicating Ch'ol culture and the environment.

As we saw, the museum conserves and exhibits archaeological pieces of the Mayan culture and showcases handicrafts typical of the people of the Ch'ol community. It follows then that the museum, through encouraging the traditional craft skills of the Ch'ol, maintains an important aspect of their culture,

- 2. It should perform activities of service to the public and non-formal education.*

In the first stages of the collaborative process between the scientists and the community many workshops took place that involved the community members in the museum's activities. The workshops provided some knowledge exchange in

particular between scientists and the children of the community; however there has no continuity and the community seems now not to be involved in any activity regarding the museum. The museum is regarded as a place exclusively for tourists to visit.

The failure in the appropriation of the project is made plain in the interviews by the lack of interest that community members show towards the museum. There is no inclusion of the museum in the daily life of the community, nor does it perform services to the public than stimulating tourism. In terms of non-formal education the only value of the museum is towards the visitors. As a consequence we can declare that the museum's second objective has not been achieved.

3. *The museum should also act as an instrument encouraging the conservation and sustainable use of the resources of the community.*

Regarding the third objective, it is clear that the lack of communication between museum and community has reduced the potential of the museum as an agent for environmental awareness. However, the existence of the museum has provided some work in the community and it is without question a point of attraction for tourists. The tourism has diversified economic activity within the community members, thus encouraging an alternative to the direct exploitation of the resources of the rainforest.

All the interviewees recognized that there was no continuity in the planning of the museum and its associated projects. The community has failed to fulfil the agreements that they had with the researchers. Lack of enduring appropriation of the project could be related to the way local people were never involved in the specification of the content of the galleries; the historical process of displacement of the community members may be a significant and more far-reaching factor.

4. *It aims to responsibly fulfil the preservation activities of the museum's objects and the cultural and natural heritage.*

As mentioned before the museum effectively carries out its role as a space where objects of importance to the community's cultural and natural heritage are conserved. These objects in themselves are essential to the conservation of the identity and ethical values of the community and make manifest the relation the Mayan ancestors had with their natural environment. However, those values, and the identity of the Ch'ol people of the community of Frontera Corozal, have been reinterpreted by outside exhibition designers. While the museum was initiated by the community it has been designed by outside collaborators, and the 'world view' of contemporary Ch'ol people has remained outside the walls of the museum.

Nonetheless, for researchers, and some community members, the museum remains a potential tool to revaluating and exploiting sustainably the Ch'ol cultural patrimony, a very important task considering the displacement history that the community has suffered.

We can conclude that the museum's role in conserving archaeological objects of ancient Mayans, and the cultural and natural heritage of contemporary Ch'ol has been partly achieved.

To conclude with this section I would like to comment on the suitability and validity of these stated aims. It was told, during my interviews and my conversations with the researchers involved in these projects that the goals of the museums were decided upon by the researchers with input from the community members. The stated aims presented here are a translation from official documents of the museum. These official documents were elaborated by the researchers as a response to the need of registering the museum legally and applying for funding to governmental agencies. However, the researchers that provided me with these documents, Dr Alfonso Valiente and Dr Elena Alvarez Buylla, affirmed that the community advice was considered in their elaboration.

And both scientists claim that museum committees in both cases gave their approval to these stated aims.

After analysis of both case studies I can conclude that these aims cover several important items in ecomuseum theory and practice, such as empowerment through safeguarding of heritage, sustainable use of resources, improvement of livelihood and conservation of heritage. However, there are important issues that are being left out of these aims. Most notably, there is a complete absence of the conservation of intangible heritage or traditional knowledge as an important part of the aims of the museum. Furthermore, there is no mention of the importance of the museum as a tool for self-reflection and re interpretation of the community's identity.

As a consequence, these omissions in the development of the museum have contributed, in part, to a lack of involvement or appropriation to the project as a way to conserve the intangible culture of these two communities, a subject that I will discuss in the following section.

9.1.2. Conservation of cultural heritage

My second research question was: In what ways do they contribute to the conservation of cultural heritage of the communities?

Both museums have successfully established institutions in which objects related to their cultural heritage are preserved. In this sense the traditional aim of museums as an instrument for the conservation of patrimony has been met.

However, it was my interest in this research not only to investigate if the museums were achieving traditional roles, but to analyze to which extent they were active participants at a local level. Were they engaging in processes of participation and empowerment in their communities through the development of galleries that represent the common heritage? Did the museum become, in other words, a 'common good' that brought together key elements of community existence: the

sustainable conservation of heritage and environment; education both formal and informal; and a broader and more sustainable economic life.

In the analysis of the interviews we can recognize a contrast between the way the museums were conceived, and the actual realization of the project. On one side, in both museums, scientists made clear that their goal was to provide communities with a project that they could relate to and therefore appropriate as their own. Assemblies, consultations and workshops were duly put in place in order to engage the communities. Despite the discourse of inclusion of the inhabitants of the communities, both groups of scientists left out the communities from any decisions regarding the content of the galleries. It is, in this sense, then, that both museums follow a very traditional scheme: gallery displays are not based on the questions and needs of the community, but are designed by experts who refer to their own knowledge as the sole relevant epistemic foundation (Schouten, 1987).

The value of traditional knowledge was recognized by the two sets of experts involved in the community museums of San Juan Raya and Frontera Corozal. However this has not been reflected in the galleries. These museums continue the trend, identified by Janes, who states that given the increasing reach of formal science as a model explaining reality, so there is corresponding decrease in the representation of people's experiences and senses, and local knowledge is fading from established modes of communication (Janes, 2008).

As a consequence, these two museums have not fulfilled tenets of ecomuseology in the sense that they are not institutions in which people can recognize themselves: their questions and reflections are not seen in the displays of the collections (Schouten, 1989). On the contrary, the representation of the community has been found to be consistent with the ideas of Mullen-Kreamer, who states that indigenous cultures are represented as arrested in time, both intellectually and culturally, thus perpetuating colonial views of domination (Mullen-Kreamer, 1992).

Nevertheless, the system by which the two museums are managed is democratic, and it encourages community members to undertake activities that benefit the community. Despite the exclusion referred to above, the creation of the museums has allowed both communities to revalue, and become responsible for, the management of their own heritage. The involvement of the community is more directed towards the practical issues of the preservation and safeguarding of their heritage than in processes of reflection of heritage and the creation of the content of the galleries.

In this sense, analysis of data has identified a tension between traditional museum practices with a colonialist view, and a new museology that attempts to include community members as managers of their own resources.

This research has suggested that the two community museums have brought a varied set of benefits to the community members. Corsane and collaborators (2007) decided to evaluate the success of ecomuseums in Piemonte area, Italy in terms of forms of capital. In this regard, I suggest that the value and benefits of these two case studies can also be seen under the light of Bourdieu's ideas on capital. French sociologist Pierre Bourdieu (1986) defines capital as a structure of the social world, a set of constraints that govern its functioning. Capital, according to him "*presents itself under three fundamental species (each with its own subtypes), namely, economic capital, cultural capital and social capital*" (Bourdieu & Wacquant, 1992: 119). The creation of capital, he mentions, determines the chances of success of a certain social structure or individual (Bourdieu, 1986).

Findings in my research suggest that the creation and development of the case studies have resulted in the creation of different types of capital for the communities. My research has shown that through the management of their resources in a sustainable way, that the communities have acquired economic capital.

Moreover, the evidence gathered and analysed in this research has shown that the creation and management of the museum has also brought them human capital, in

the form of skills, knowledge and competencies that facilitate personal, social and economical wellbeing and empowerment. In building relationships of knowledge, a creation of scientific culture, “sense of pride”, change of gender-related attitudes and awareness of the importance of the natural and cultural tangible and intangible heritage the community members have acquired symbolic⁸⁶ capital.

My research is also consistent with the ideas of Corsane and collaborators (2007) that the ecomuseum practice can sustain human capital to go beyond individual to build social capital⁸⁷ in the community, mainly through cooperation and facilitation of social links and networks, as well as the establishment of democratic decision-making processes to enhance their quality of life while conserving their heritage.

As argued before, these two museums put little attention to the safeguarding and conservation of intangible cultural heritage. My evidence suggests that community members in the two case studies have not been involved in processes of construction or reflection of their own identity. In this sense, they have failed to construct identity capital⁸⁸ in the individuals of the community.

⁸⁶ Bourdieu (1986:256) describes symbolic capital as capital that is “*apprehended symbolically in a relationship of knowledge*”

⁸⁷ Social capital has been defined by Bourdieu as “*the sum of resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition*” (Bourdieu and Wacquant, 1992:119)

⁸⁸ Cote (1996, quoted in Corsane, et al., 2007:236) describes identity capital as “*the result of investing time and energy to constructing or reinforcing a particular identity.*”

9.1.3. Social change in terms of empowerment and sustainability

My last research question was: Do they make a contribution to the improvement of everyday life in the communities? If so, in what ways are they helping the empowerment and sustainability of the communities?

As I have discussed the discourse in sustainable development in developing countries has shifted from the necessity of technological advancement and economic growth towards changes in asymmetric power mechanisms, wealth distribution and social and political scenarios (Mallorquin, 2012) Democracy and social justice, empowerment and participation are now considered prerequisites of sustainable development (Allan, 2001)

Davis (2007) claims that ideas of locally-based democratic approaches to sustainability have evident connections to ecomuseum philosophy, since ecomuseum are dedicated to conserving “the special nature of individual places” (Davis, 2007:198) Furthermore, he argues that the difference between ecomuseums and other initiatives of ecotourism promotion is the major stakeholder position of the community. In ecomuseum practice the communities decide the cultural and natural features that are promoted as tourist sites and therefore can show their heritage through their own eyes (Davis, 2004).

Ecomuseum scholars have proven the relationship of ecomuseum and sustainability and community development (Galla, 2005; Davis, 2007; Murtas and Davis, 2009; Perella, *et al.*, 2010) citing success stories from ecomuseums in China, Italy, Japan and Vietnam that have been able, through ecomuseum practice, to enable local residents to celebrate and conserve their environment, while improving community development.

As examples of ecomuseums that have achieved a balance between ecotourism and development of the communities within a protected area we find the Hoi An ecomuseum, situated in an area inscribed in the World Heritage List in Vietnam, seeks through a participatory initiative, to ensure the sustainable development of

the area, and has achieved a balance between economic development, ecotourism and safeguarding of heritage. (Galla, 2005)

The ecomuseum situated in the Ha Long Bay area, a national protection area in Vietnam also aims at reclaiming control of heritage values by local authorities and actively pursuing measures to control and reduce environmental threats to the area. (Galla 2005)

L'écomusée du mont Lozère, an ecomuseum in the Cevennes national park in France, is devoted to the conservation of a certain area including elements of space, time, territory and participation of the communities (Davis, 2011) and offers a permanent exhibition and educational walking tours of the park. Another example is the ecomuseum in Kristianstad, Sweden, that attempts to conserve the natural and farming landscape of the wetlands of the area (Davis, 2011)

Analysis of the two case studies revealed the difficulties that local communities living in protected areas must endure. My findings are consistent with the ideas of anthropologists who state that the establishment of a natural reserve often brings difficulties between government officials and community members (Orlove, 1991 & 1992; Orlove & Brush, 1996; Conklin & Graham, 1995). The two museums originated as a consequence of these difficulties

Davis, through an assessment of ecomuseums in Japan, Italy and China (2007: p. 213), comes to the conclusion that some are *"specifically geared for cultural tourism with a view of sustaining communities by providing real tangible and economic benefits for local people"*. Initially, it would appear that this is the case of the community museums of San Juan Raya and Frontera Corozal, however these two case studies show that members of the community have benefited from the museums in many respects. Economic benefit, specifically in terms of tourism, prevails as one of the most recognizable traits that inhabitants of the communities value in these projects, however my research shows that the museum has brought about a recognition and revalorization of their patrimony, a sense of

empowerment and pride as well as an increased scientific knowledge and environmental awareness in the populations.

In the case of San Juan Raya the museum has meant there is now a way for them to exploit their natural resources, through tourism, in a sustainable way. From the statements given by both community members and researchers we can get a sense that there is a marked 'before' and 'after' in the creation of the museum. Given the level of participation and involvement, and the economic opportunities and the sense of pride and ownership of patrimony that this project has generated in the inhabitants of San Juan Raya, the museum is recognized as having a positive impact in many aspects of the life of the community. Not only it has been successful in itself, but it has served as generator of other projects of sustainable development in the community.

The case of Frontera Corozal, as recognized in the interviews, tells a very different story. The displacement of the community, and subsequent confrontations with government officials, provoked the need to safeguard cultural heritage in the community. The museum was founded as a consequence. However, as seen in the analysis of the interviews, the museum has faced participation issues and the value of the museum in economical terms is not currently significant. It does not provide sustainable opportunities of development to the population, and so contrasts with the museum of San Juan Raya. This is consistent with ideas among conservationists that the participation of local institutions in the management of natural resources is critical to the success of conservation efforts (Edwards, 2005).

On that subject, the appropriation of an initiative like the community museum has a great potential in the support to sustainable practices, since it is a tool with which the communities are themselves managing their own resources sustainably. The relevance of these case studies in those terms is that they both represent initiatives, with different degrees of success that sought to integrate conservation of the environment with a wise use of the resources and the protection of cultural heritage, always encouraging the local management of their own resources. The importance of the implementation of a model of community-based conservation

has been recognized by many scholars as key factor in achieving sustainability (Davis, 2007; Gilbert, 1990; Brown, Mitchell & Beresford, 2005; Western & Wright, 1994). Both museums can then be regarded as initiatives that seek to address economic needs of the population and implement the model of community-based conservation in the quest of marrying conservation goals and local development.

Perhaps, the weakness of the projects as viable alternatives of sustainable development comes from the fact that they both constitute initiatives that rely on tourism. The relationship between conservation of natural and cultural heritage and tourism has been proven to be marked by contradictions and conflicts and conservationists have often regarded ecotourism and heritage tourism as focused on profit goals instead as conservation ones (Nuryanti, 1996) as a far from ideal way to conserve resources. However, since national parks where no human activity is allowed have proved to be highly problematic (Orlove & Brush, 1996; Western & Wright, 1994) a way to include national park populations in these conditions to economic activities is needed. In order to minimize the risks that tourism poses in regards to heritage conservation, and to increase the likelihood of sustainable development, there is a need for dialogue and collaboration among all stakeholders. Only if a common goal is found for all factions interested in tourism can initiatives grow in a way that fulfils both conservation and development goals (Aas, Ladkin & Fletcher, 2004; Kaus, 1993; Orlove & Brush, 1996; Hill & Press, 1994).

Given the rate of illiteracy that prevail in both communities, the limited access to information, and the high biodiversity in their lands, researchers have wanted to approach both museums as potential instruments for increasing environmental awareness. Throughout my interviews with the scientists and researchers involved in the projects I noticed a clear commitment to help community members to improve their social reality through the diversification of their economic activities. Both groups of researchers stated in interviews that an important part of the collaborative process was driven by their desire to make people recognize better the value of the biological resources the communities have in their lands. My findings in this respect coincide with Davis (1996) who states that museums can

play a support role in the conservation of the environment, mainly in two ways, through the creation and maintenance of biological collections, which document the biodiversity of the region and through their educational activities which help to raise awareness among the population and the visitors.

The two museums have successfully established galleries to preserve and exhibit biological and fossil collections to document the richness of the region. These exhibitions act as mirrors in which visitors can see the value of the natural heritage of the region.

Certainly, the communication processes that took place during the creation of the museum between researchers, reserve personnel and community members provided the people from these two villages with scientific information that has helped them reassess the value of their natural resources.

The rise of environmental awareness was attempted by the collaboration between the researchers and the community, especially through the establishment of workshops and talks with scientists. In terms of the creation of environmental awareness, the analysis of the interviews suggests that in the case of San Juan Raya the creation of scientific knowledge in the population has been an important factor. The museum was regarded as important in the environmental education of the younger generation, through representing their heritage and through engaging with children and young adults, especially in terms of their involvement in the guided tours schemes. On the other hand, in Frontera Corozal, the lack of participation has diminished the impact of scientific knowledge. The relationship between scientists and community members has not always been amicable, making the dialog difficult on certain occasions and decreasing its success in terms of conservation. This has led me to conclude that the only role in terms of environmental awareness achieved by the museum is through its galleries and their displays of regional patrimony.

As I mentioned in chapter 4 Perella and collaborators, argue that two tendencies can be identified in ecomuseum theory and practice; *the environmental ecomuseum*

and *the communitarian ecomuseum* (Perella, Galli and Marcheggiani, 2010: p.439). These case studies have integrated characteristics of both tendencies given that they focus on the conservation of the environmental and cultural aspects of the community and the promotion of environmental education, but also aim to take on the role of a bottom up tool for social development and management of local resources and heritage.

Furthermore, these case studies, through their differences, are highly revealing about the fine-grained local differences that can make one project successful, another less so. My work has shown that historical and socio-economic factors heavily influence the dialogue among participants, the process of participation and ultimately the outcome of a collaborative project.

Irwin (1995: p. 136) states that whenever governments begin to tackle 'sustainability' public participation is generally swept away: "*responsibility falls to us all, but only once we follow the government's lead*". These case studies prove that groups of citizens can establish successful practices of conservation and that public participation is essential in rural conservation projects, specially in terms of highlighting the importance of the biodiversity of an area, helping the local people to gain scientific knowledge of their region and to reaffirm their traditional knowledge.

9.2. The value of the case studies as science communication activities in Mexico

It has been evident through my analysis the value of these museums is deeply related to the place where they are located. In this section I would like to make concluding remarks on their value as activities of science communication in Mexico.

In chapter five (section 5.5, page 125) I explore the science communication panorama in Mexico and highlight that science communication activities in Mexico suffer from several problems. Firstly, is the issue of the absence of participation.

Professionals in this domain are trying to develop programs and initiatives that use varied media to try to reach as many varied audiences as possible, however the deficit model, which situates the public in the receiving end of the information with little possibility to participate, is still broadly used in the country. A deeper form of public participation, the one that Nina Simon (2010) describes as “*contributory*”⁸⁹, is mostly absent in Mexican science museums and other public engagement activities.

Despite the lack of inclusion of the communities in some decision-making processes during the creation of the museums here presented as case studies, the development of the museums did include, at all times, the active participation of the community. It is, in this respect, that one of the most important contributions of these museums to the science communication panorama is their value as participatory institutions. These community museums propose a novel method of establishing relations between the museum and their communities and therefore represent a step forward towards a more inclusive model of engagement of the general public with scientific issues.

As it was also mentioned earlier in chapter 5 (page, 112), Mexico is a country that presents high illiteracy levels and where formal education suffers from grave deficiencies. In order to inform the general public about scientific issues the need to diversify strategies of informal education to complement the formal education in public schools is pressing, especially in marginalized areas where education is not always easily accessible to all children. A further positive role of these community museums can be recognized in this respect. The case studies are also a valuable effort of providing informal science education to communities that have limited access to education and that have historically marginalized. These museums have the possibility of improving the scientific culture of the communities and could be suitable environments to form new scientists

⁸⁹ The classification of the different kinds of participation of the public with cultural institutions can be found on chapter 3 page 80.

Community museums can also work in both directions, as a window to bring scientific issues to the community and also to show the richness of the community to the world.

Another problem signaled in chapter five is that the world of science communication in Mexico is centralized in geographical terms, concentrated in the country's capital and some other big cities, but also centered around a few organizations such as the DGDC (National University's General Office of Science Popularisation) and the Mexican Society for the Popularisation of Science and Technology (SOMEDICYT). As I mention in the introductory chapter, community projects with a scientific content are not a common sighting in the science communication landscape of the country. It is then worth emphasizing the value of these museums as science communication activities relies in their uniqueness, because community museums with scientific content are virtually nonexistent

To improve the public engagement with science in Mexico multiple efforts on many fronts are necessary (Beyer-Ruiz and Hernandez, 2009). These community museums are an original initiative that aims to open communication spaces that touch scientific themes in a setting that has historically been left out of the reach of science communication activities. After analysis of the interviews I can conclude that these museums are fulfilling, to different degrees, their aims of informing the general public of the science that is being done in the country, promoting scientific vocation in young adults and children and raising awareness of the social, cultural and economic importance of the environment.

Finally, as Giamello (2011) states, the repeated political, social and environmental crises in Latin America have put the consolidation of centres and programmes of science popularisation at risk. In this sense, an initiative that is managed by the community in a sustainable way, that has been appropriated and brings benefits to the community, as is the case with these museums, is in a better position to overcome some of the difficulties that Giamello (2011) mentions.

9.3. Broader implications and final remarks in terms of new museology

As part of my concluding discussion I would like to make some final comments how my analysis of the case studies can inform academic research in the field of eco and community museology.

One of the issues prioritised by the “*nouvelle museologie*” was the strategic and moral importance including the community in conceptualising and development of the museum. This gave rise to a vast array of participation processes discussed earlier in this thesis (Simon, 2010). My case studies can be identified as representatives of the new museology in the sense that these museums have sought to get closer to their communities, to be literal: they aim to combine their aspect as presenters and preservers of objects, values and traditions, with another aspect as a listening, responsive structure that is completely porous to the needs, skills and philosophies of local people, with consequent changes and transformations in lifestyles and behaviour (Hauenschild, 1988; Davis 2011). The two case studies allow us to reflect on ideas about in which new museology should direct itself, particularly those ideas that focus on the community as an actor in the development of the museum: ambitious ideas for the role of museums in changing of social reality and which place museology into a territory defined by geography, politics, economy and ethnicity (Maure, 1996; Simpson 2009).

However, my study indicates that not all of new museological ideals were achieved. A real dialogue in which there is equality between all parties involved, and symmetry of participation is not yet in place. Old practices of the representation of indigenous cultures prevail. Conceptions towards traditional knowledge have not changed, and even if the discourse of inclusion is present, inclusion in practice is partial. Decisions on the content of the galleries have been dominated by science as the ultimate authority.

The inclusion of the communities in the decision-making processes of these community museums has not lived up to the promises of the ecomuseum movement as a whole. On the contrary, in this respect we have seen that these

case studies reflect that little has changed in respect to the representation of indigenous cultures in museums. It is in this sense that both museums follow a very traditional setting. Both were conceived and created by outsiders to reflect their expert knowledge. Both, in a way, are perpetuating the deficit model of communication, in which the experts create and deliver the message and the audience receives it.

Specifically in regards to the representation of indigenous cultures, my findings, coincide with the ideas of scholars Simpson (1996 & 2009) and Mullen-Kreamer (1992) that state that indigenous people have been mainly used as subjects, resources and informants, but have been largely excluded in the processes of representation and reflection on their heritage as museum content. As discussed in chapter 3 eco and community museums can be tools for empowerment of the community, since they provide a tool with which the community can express themselves, where they see their traditions and culture reflected (Ducet, 1999).

However, the findings of this study prove that in these case studies this has not been achieved since community members have not been allowed to participate in the creation of the galleries. Furthermore, since the power of representation has also been linked to issues of authority (Lavine, 1992) it is important to mention that in the case studies researchers and museographers retained the authority in deciding what to exhibit and how to do it. Although community members have participated in the museum as management staff, they did not have the power to decide what was worth conserving and exhibiting, and thus have been kept out of a reflective process that that could lead to greater empowerment.

Given this lack of representation in the museums' galleries, it is important to highlight that processes of empowerment and revalorisation of their cultural and natural heritage have taken place in the communities only as a consequence of the involvement of community members in the management of their heritage, As it has been discussed in preceding chapters eco or community museums aim at contributing to the community's progress and wellbeing in many ways. According to Sandell, the contributions of museums to regeneration and renewal of the

deprived communities include *“enhanced community self-determination and increased participation in decision – making processes and democratic structures”* (Sandell, 2007: p.99) The galleries might not have their view of the world and their participation in the creation of the museum has not been strong in each stage, however in both communities the museum has responded to some needs and is run by them under their democratic assembly arrangement. The museum has brought them ownership of their resources, and in agreement with the ideas of Alsop (2006), the empowerment of the community has been in the sense of control over their resources and patrimony.

These museums have brought about a revitalization and revalorization of their cultures, not as outdated ways of life, but as relevant components of our modern world (Simpson, 2009). This, Simpson (2009) acknowledges, has an empowering effect in indigenous populations that have suffered centuries of suppression and social injustice as a consequence of colonialism. It is, in this sense, that both museums do convey a sense of empowerment and an encouragement of “sense of pride” and “sense of place” to their communities and step forward towards the achievement of social equality of the two communities in which they are placed.

As Donghai (2008: 38) states, the concept of the ecomuseum *“can only flourish through a process of localization (...) so each museum can only prosper in response to its own particular surroundings”*. Ecomuseums are cultural products and are inevitably a consequence of the economic and social circumstances of their environment. In this respect some aspects that contrast between my two case studies are a consequence of their different realities. However, after analysis of the interviews I can conclude that there are some common points in both museums.

In spite of the greater success of the museum of San Juan Raya, compared to the museum of Frontera Corozal, both initiatives present the characteristics and defining traits of ecomuseum practice in terms of: their geographical position; their conservation of heritage in situ; the management of heritage by the community, and a sense of pride. Conversely, both museums also lack some characteristics of ecomuseum practice, most notably the lack of self-reflection of the community on their own heritage.

After having been immersed in these two case studies, I am positive that ecomuseums in Mexico could benefit greatly of the establishment of an ecomuseum network that could allow communities to share and learn from each other's experiences, to evaluate their own work, to cooperate and find solutions to common or recurrent problems. Such a network could also contribute further to shift the power over knowledge from experts to community members.

9.4. Future research

I have chosen to evaluate the museum from a social point of view and place an emphasis in describing and analyzing the processes and interactions that operate in the background, which in a first instance could produce case studies that cannot be easily generalized. However, I am confident that the theoretical frameworks used in this research as well as the methodology followed can be reproduced to analyze projects in other circumstances and that this research can provide a good basis to continue exploring the complex and intricate issues that arise in the development of such projects.

With this research I provide insights into the importance of these museums in rural areas, stressing practical lessons on their work methods. Furthermore, this research will provide general significance beyond the Mexican example, which will contribute to the understanding of the role of eco and community museums in many other rural areas in the world. In accordance with the ideas of Moira Simpson (1996 & 2009), that community museums are an important tool in the recognition of the contemporary value of indigenous living cultures, the revitalization and revalorization of heritage of the cultures involved and most importantly, that they can have a positive impact on the lives of indigenous peoples that have suffered discrimination and marginalization.

This research has confirmed that in ecomuseum practice the social background of the community is of high importance. It has shown how the success of an ecomuseum, is dictated by the environment in which they are and by the history of

the community. It has proven that ecomuseums are reflections of the culture that surrounds them.

My research has shown the effective communication and collaboration processes that have to be put in place to make a community museum successful, sustainable and durable. This research has demonstrated that the inclusion of local peoples in the creation and management of museums can inflict a positive impact in the community at various levels. However, my findings show that it is only through an equitable dialog and symmetry in participation without any notions of antagonism that these museums can aspire to be part of the transformation of their communities.

The results of this research can help to gain recognition for ecomuseums as valuable alternatives of heritage conservation, and empowerment and promotion of social change. This research also sustains the idea that local residents are the rightful owners of their local heritage and that the continuity and sustainability of an ecomuseum is part guaranteed by their involvement as active managers of their own resources.

My research has also provided a glimpse of the difficulties that these types of projects face and has shown the importance of a trusting relationship between all groups involved. Finally, through this research it has been evident that tangible benefits can be translated into more awareness of intangible heritage values and better protection of heritage sites. And that it is possible for the museum to combine economic opportunities with cultural enrichment.

I am confident that my research methodology can be used in the future to analyse other ecomuseum experiences and will contribute to the understanding of the role of eco and community museums in many other rural areas in the world.

As I have suggested in this study the processes of participation, the establishment of a dialogue and the encouragement of a real dialogue of knowledges in which all parts involved are given similar value are key aspects in the success of such a

museum. It is therefore imperative that a mechanism or methodology that guarantees a real dialogue and a contributory participation is established in the development of such a museum.

Thus, from an academic point of view continuing in the investigation of these dialogues and participation processes are most obvious subjects for future investigations. A follow-up study of case studies a in a few years time, could add valuable data to how the role of the museum changes as social dynamics in the community are also changing.

Moreover, the implementation of an action research project seems also like an obvious step to follow in this field of study. As identified in my findings, many of the problems encountered in both museums, e.g. the lack of appropriation and the lack of representation of the views of the community in the gallery space could be avoided if the researchers or outside collaborators had adopted a more participatory approach in the creation of the museum, such as the methodology of Participatory Action Research. According to this methodology, participation can be seen under two different approaches, as a means to an end or an end in itself. Robert Chambers is a major proponent of the participatory approach as a means to empower the marginalised and the powerless and engage with them in dialogues and processes. He presents the methodology of Participatory Rural Appraisal (PRA) as an alternative to the unsuccessful top down disempowering approach (Chalmers, 1994, 2002 & 2005). A project of this kind could allow to establish a project that encourages dialogue and participation and to analyze from the initial stages the interactions that take place among all stakeholders involved. A participatory approach will also be effective in identifying the reasons behind lack of participation or lack of interest of some groups within the communities.

In this sense, most importantly, I have demonstrated the complexities of dialogue and participation between researchers, government officials and community members in the establishment of a community museum. Equity in dialogue and symmetry in participation, it appears, do not come naturally but are subjects to historical and social assumptions. Attitudes to each other, are defined by the

historical and social background of groups involved thus, work must be done to achieve a project where co-creation and mutual learning is achieved. Opportunities are therefore needed to help communities to reflect on their cultural and natural heritage, to encourage processes of “sense of pride and sense of place” and empowerment. Moreover, such processes could not only help community based conservation projects, but can also permit all potential groups involved to reflect on social assumptions that reach into the heart of their professions and allow for a change of attitudes.

The Brazilian pedagogue Paulo Freire said that *“dialogue awakens an awareness”* (Freire, 1974: p.125). It is in this sense that if the museum seeks to be a place where awareness is risen and social changes are to take place, it is of extreme importance that the process of creation of the museum involves a process of dialogue, of knowledge exchange and rise of awareness between outside collaborators and community people. Freire states also that dialogue is *“to devote oneself to the constant transformation of reality”* (Freire, 1974: p.113).

In this sense, if built within an ambiance of dialogue collective creation museums can be discursive spaces that allow to carry out an institutional critique of museum practices as well as a dissident political culture whose objective is to transform realities through education and participation (Rodrigo, 2007).

Hernández-Hernández (2011: p.70) states that *“to be able to change the totalizing mechanisms of monolithic and exclusive cultural policies, there has to be an awareness that museums and the cultural heritage are not the sole property of politicians and curators, but also belong to the citizens who receive this heritage, contemplate it and share it.”*

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Annex 1

Interview Schedule

Outside participants

<p>What is your name?</p> <p>What is your occupation?</p> <p>Where does your interest in working with the community come from?</p>	<p>Ice-Breaker Questions</p> <p>Presentation of the Interviewee</p>
<p>Tell me about the process of creation of the museum. How did you become involved in the project?</p> <p>Did the community contact you to work with them? Or was this an initiative of the University/Government?</p> <p>What was the reason behind the creation of this museum?</p> <p>Who funds it?</p>	<p>Researchers involvement with the project</p> <p>Appropriation of the community</p>
<p>You must have thought this was a project worth doing, why?</p> <p>What is its value?</p>	<p>Value of the museum for the community members</p>
<p>Would you say that the project was driven more by the community or the “external people”</p>	<p>Communication process between experts and community members</p>

<p>involved?</p> <p>How was the negotiation of what to put inside the galleries between researchers and community members?</p> <p>Did you take into account traditional knowledge when designing the galleries' content?</p>	<p>Attitudes towards traditional knowledge</p>
<p>Have you noticed any changes in the communities' social dynamic since the foundation of the museum?</p> <p>Is the community interested in the museum? Has it generated other projects?</p> <p>Do you think this has helped to increase the quality of life of the community?</p>	<p>Role of the museum in the community's social life</p>
<p>Do you think the museum has a role in the conservation of your cultural heritage? If yes, in which ways?</p> <p>Do you think that the museum is a tool for the conservation of the environment? If yes, in which ways?</p> <p>In terms of conservation of the environment, how do you measure the success of the museum?</p>	<p>Role of the museum in terms of conservation of the environment and cultural heritage</p>

People from the community

<p>What is your name?</p> <p>What is your occupation?</p> <p>Do you work at the museum? If yes, which are your tasks? How did you start working here?</p>	<p>Ice-Breaker Questions</p> <p>Presentation of the Interviewee</p>
<p>How did the idea of starting a museum arrived to the community?</p> <p>Why did you decide to start a community museum?</p> <p>Was this a community initiative or someone external came to tell you to do it?</p> <p>Why was it necessary or important to have a museum?</p> <p>How did you secure funding for the construction of the museum?</p>	<p>General background of the museum</p> <p>Events that lead to the foundation of the museum</p>
<p>How did the community got involved in the planning, establishment or management of the museum?</p> <p>Did the community decide what to put in the museums galleries? How did the process happen, through consultations, meetings and assemblies?</p> <p>How is the museum managed and by whom?</p>	<p>Involvement of the community in the museum.</p> <p>Appropriation Issues</p>

<p>Is the community interested in what happens in the museum?</p>	
<p>Which is, in your opinion, the role of the museum in the community?</p> <p>Do community members visit the museum?</p> <p>Is it a place where other communal activities take place?</p> <p>Has the presence of the museum meant any change in the everyday life of the community?</p>	<p>Role of the museum in the social life of the community</p>
<p>How was the communication process with the outside researchers?</p> <p>Did they take the community's opinion into account? Did they value traditional knowledge? Where they interested in portraying that in the galleries?</p> <p>Did you take their opinion into account?</p> <p>How you value the scientific knowledge they bring with them?</p>	<p>Communication process between experts and community members</p> <p>Attitudes towards outsiders</p>
<p>Has the presence of the museum changed something in the community's wellbeing?</p> <p>Has the presence of the museum initiated other similar projects in the community?</p>	<p>Importance of the museum in terms of social change</p>

<p>In economic terms, does the community represent a benefit?</p>	
<p>Do you think the museum has a role in the conservation of your cultural heritage? If yes, in which ways?</p> <p>Do you think that the museum is a tool for the conservation of the environment? If yes, in which ways?</p> <p>Do you think this is important?</p>	<p>Value of the museum as a tool for cultural and natural heritage conservation</p>

Annex 2

Interview Transcripts

San Juan Raya

Community members

Interviewee	Place	Date
Alvaro Reyes Cortes	San Juan Raya	9th December 2009

AL: Good afternoon Don Alvaro could you tell me your profession?

AR: I am the representative of communal goods of the community of San Juan Raya

AL: So, you have been, as a representative of the community members, involved in the museum? What do you do there? What are you in charge of?

AR: Ok so as a representative of communal goods, because everything here is communal, all the lands, so I'm in charge of all the services the museum provides, like the guided tours. This is excluded of what the inspector does, he has other duties and this is the duty of the representative of communal goods. The museum is communitarian but the maximum authority within the community in respect to the museum and the guided tours is the representative of communal goods.

AL: So you decide then who is the president of the museum and other positions. Or is it decided differently?

AR: No, the positions are decided in the assembly.

AL: Ah ok.

AR: Yes. But I tell you, we have a museum committee, a tourism committee and also the workers who in charge of the museum and the visitors. But any other issue related to the museum or when the issue is to make changes in the committee then it is my responsibility to call for an assembly. Or when the issue is very important like the construction of the museums or things related to other tourism projects then they deal with us.

AL: That is your responsibility.

AR: Yes.

AL: So, do you know how the project of the museum started? Whose idea was it? How was the creation process?

AR: Well, this is born due to - I think people have already talked to you about it, in the past some pieces were sold, exchanged for food, clothes, some coins. The fossils, we exchanged them and then the federal police comes and arrests one person from here and another one

from Santa Ana, they charge them with trafficking of fossils and archaeological pieces. Now we know that it is a federal crime - they took them to the city of Puebla where they locked them up. Then they told us that exchange or sale of fossils was strictly forbidden. I'm really bad with dates so I cannot remember when was this exactly, but for two years I think, this was dead for a while and then someone came and told us, I don't remember exactly who, you can exploit the fossils, you can get something out of them, but you have to build a museum, we have to recognize it before INAH (National Institute of Archaeology and History) and that is how the idea is born.

AL: But, was this person from here, from the community?

AR: I don't remember exactly, maybe Juventino remembers the dates and who they were. I remember there was a guy from CONAFE (National Forestry Commission) who started the fossil collection. The fossils were put there in the police station, we put them on some bricks and wooden boards and so we started exhibiting them and so when visitors came we showed them the fossils. Only the museum. Afterwards, when Don Felix was the acting sheriff, I was the secretary and we contacted people from the reserve or they contacted us? I don't know how exactly. Then we opened the first guided tour "The turritellas park". The first project was there and we put the fence and we did the suspension bridge and the paths and signs. That was the first guided tour and from there we have been growing, implementing others, the dinosaur tracks, the barrel cactus, the bikes, the horses and that. Also the construction of the new museum. That has been going on for years. I don't remember exactly how many, but I think we started it seven or eight years ago.

AL: And the development of the museum was done alongside with Dr. Valiente and his team right?

AR: Yes that's right.

AL: And how was the communication process with them?

AR: I think it went well, we never had any problems. They came with the ideas of what the experts of the museum had and we said if we liked it. Also, Dr. Vali came to tell us about which type of information he was going to put, the fossils and all that.

AL: And the community, did they take part in the creation of the museum?

AR: Yes, we helped the experts when they came to do the museum. Painting the rooms, putting all the fossils, etc.

AL: But the decisions of what to put in the museum were not done by you, people of the community?

AR: No, we just collaborated in the work of putting it together.

AL: How is the management of the museum now? The administration and all that?

AR: Well we have tried to get better all the time. In the museum we used to give a percentage of the winnings to the person in charge, it was really little. The person in charge was changing all the time. The people that were in charge of taking care of the museum were doing more a service to the community than a job because the earnings were really little. This was before we had the guided tours, which make more money. We used to give them only a percentage of the entrance fees of the museum. But this has

grown, more people are coming and we are charging more for the guided tours so we are generating a bit more income and so we decided to have a person in charge with a salary. And the committees were also created, the committee of the museum. Also before we didn't have tourism committee and now we have created one.

AL: How often do committees change personnel?

AR: Every year, every two years, sometimes if a committee is doing well they stay in the post for longer and if not, if people say they don't want the job we have to change it. We make assemblies every two or three months, depending on the issues that we have to attend, if we have urgent matters then every week we can call for assembly for one or two issues to attend. But yeah, I feel that we still have many things to do. We are doing them. We have to work on our field also and well given the current situation we cannot dedicate as much time as we wanted to the position. We have to be able to pull more resources for the projects we have, but we cannot invest all our time here, we have to work. Sometimes I even want to quit because I lose so much time, and even my wife wants to throw me out of the house (laughter).

AL: (laughter).

AR: Yes, well the truth is we still have a lot of work to do.

AL: And for example, can you say I don't want to be the representative any more, or you have to wait until they choose another one.

AR: Normally, you have to be in your position for one or two years, but sometimes for certain reason people have had to leave and well we do understand. It has happened that people have been changed after a small amount of time. Not always because of bad management, but because sometimes people have to leave to work somewhere else or other personal situations. Then yes we have done unscheduled changes before.

AL: And with the people that are in charge of the museum is the same?

AR: Yes, sometimes the president says, "listen, I can't do the job anymore" because they are not working well or due to other reasons. Sometimes only one person changes, sometimes the whole committee gets changed (laughter). The problem is that we don't have an internal regulations document and we are trying to make it so that we could regulate all those issues. How often to make assemblies, reports on the accountability of our earnings, how often to change the committees and all those issues. Now we have many issues to attend so our money is divided between the committees to complete the works we are doing, like maintenance of the museum and the paths of the guided tours. We give a percentage to management, money to do works here and there and other issues always arise and so we use the money from museum's entrance and tours to take care of other stuff. For example we are going to use the community's percentage of the earnings of the museum to put the roof on the hut where we are going to sell handicrafts. From the money we have, which belongs to the whole community, we are going to take the part that belongs to the people and we are going to invest it in the roof. A person came recently to make a budget regarding the painting of the museum's iron fences, the walls and the cases. But first we have to find out what people say about it, because it is a lot of money, he charges 23.500 pesos and we have to see if we can cover it completely with the money from the museum, but first we have to ask the people if they agree. That is how we have been working.

AL: If you could change some things inside the museum what would you change? What works and what doesn't?

AR: To change? Well, I think that to make the museum more successful we have to put more effort into it and make more people interested in participating. I think we have to make it a legal concept, make it legally recognized and to make it more legal, with set rules and all that, that way it can function in a better way.

AL: Why do you think the museum is important? Why is it important for the community to have it?

AR: Yes.

AL: Why?

AR: Well, San Juan Raya is kind of famous for being a zone with lots of fossils, because millions of years ago this was a sea and all that, and it is only logic that we have a museum to exhibit what was here before and what we have now. To show our richness now, but this richness comes from our past so we have to conserve it for the future. Another reason is that the museum makes our economy better; at least a few coins more for most of us, although many people say they don't benefit directly from the museum because they are not involved, but at least we are attracting people. The most direct money comes from the guided tours and the entrance fee of the museum, but now also people sell they handcrafts, little shops sell their products, and for example the hotel, the huts, and the handcraft sale. And so although maybe the little shop that is far away does not sell directly to the tourists, but if people that sell the handcrafts make money then they can buy things from this shop. And if we don't have income no one has anything. So I think that it is good that tourism is coming and that we have all this, still we don't have many things, we are not rich or anything (laughter).

AL: Well and have the social dynamics of the community changed? Have you had any problems or the organization has run smoothly?

AR: Problems, no, although sometimes we are not very organized, but this has not created conflicts or divisions. I told you, now every time we have some issue to attend, some expenses to pay we use the museum money, we are getting spoiled now, before we use to ask cooperation and volunteer work, now we take museum money and pay someone else to do it. So we are getting spoiled. For example we needed money to put a floor inside the church and the construction worker charged us 6 thousand pesos, we took the money from the museum earnings. And since the money belongs to everyone, the church committee proposed that the money needed to pay the workers came from the museum and well since the money belongs to everyone we have to ask and do what the majority wants. So, the museum has helped us solve some problems.

AL: And has it generated other projects?

AR: Mmm well for example the temporary jobs. This is an initiative of the reserve, and us with them, whenever something has to be done we ask for temporary jobs. We asked for ecotourism and we are applying it in the paths, we are putting a fence in the land where we're building the new museum up there. We are investing more than 100.000 pesos in the fencing. So the reserve tells us, we have temporary jobs, but only for ecotourism to implement ecotourism practices. So if we didn't have ecotourism practices in the village these incentives wouldn't land here.

AL: Could you explain me how this program works? What are temporary jobs?

AR: The temporary jobs program is a governmental initiative to complete certain works or projects, but not for very big projects. In this program people get paid minimum salary, I think now it is like 52 pesos for a five-hour working day. And this salary is applied to do the jobs such as the conservation of roads and paths, water wells, composts, living fences, in the community, and there is also some money destined only to ecotourism activities. The reserve administers them, but they say it is only for ecotourism, so if we didn't have ecotourism practices in the village, then these incentives wouldn't land up here with ecotourism, then they would not give us the money. Although the road is part of the tourism because without a good road tourists cannot access our community, still the projects have to be more related to ecotourism. This time we applied for money to put the fence around the new museum, we used also money to complete the path to the giant biznaga earlier this year. So they are little supports of temporary jobs and we are using these incentives.

AL: So, you say that all that is generated thanks to the existence of the museum?

AR: Exactly, thanks to the museum and the guided tours. Practically all the guided tours were made with this money, well all except the Turritellas Park that first was made with money from elsewhere and then completed with support of the temporary jobs initiative. Now the fencing and other works is also with money of temporary jobs.

AL: And the services that the museum provides are the galleries and the guided tours right? Is there anything else?

AR: We offer the museum, the guided tours to the Turritellas Park, the Dinosaur tracks, the giant biznaga, the bikes and camping area, but it is only the area because there are no services there.

AL: Do you know how many visitors you have every year?

AR: No, not really.

AL: Ok. So and the community is involved in activities within the museum. Like, do children go to the galleries, do the teachers take them? Or do you have workshops or other activities?

AR: No we haven't had any workshops yet. I think it is not necessary that children here go to the museum, or maybe it is us, the parents and the teachers, that have not interest in taking the kids in an orderly manner in school hours. Children are going in and out the museum at all times, they know everything, and sometimes they go with their parents or older siblings that are working as guides. These small kids are very involved, they even know scientific names of plants and stuff like that.

AL: Oh yes? So you think it is not necessary that teachers take them there?

AR: Well yes I think that it would be good to take them in a school trip, to keep them interested. But still they go sometimes with the tourists on the guided tours and all that. But, workshops or tours with them no, we haven't done it.

AL: Do you think that this museum is helping in a way, the conservation and sustainable development of the environment?

AR: Yes, I think so, due to the existence of the fossils many people visit us. Before this there was a lot of looting of fossils and plants, because we have always had many tourists. At least in the respect of fossils, I remember that we used to gather the best fossils we could find and we gave them in exchange of almost nothing to the tourists. Sometimes they gave us some fruits or some coins. We knew where to find the best fossils and so when the tourists came they told us "Hey kids do you know where we can find fossils?" and well we were all putting our hands up "I take you, I take you". And so we use to take them to where the turritellas are, because access is easier there, it is very near and it is an area where, I swear you, when I was a kid, you could find a layer of twenty centimetres of fossils only. We use to move the earth with our feet or our hands we found fossils and more fossils, just like that. And so for many years we used to go there and gather the fossils in bags or boxes or wherever. We use to keep them at home for when someone came, and we would give them to tourists in exchange for food or clothes, and in spite all that looting we still have lots them.

AL: And so there was also looting of plants?

AR: Yes, plants also. Mostly cactus. On one time, some people came, they said they were Japanese, to buy plants, they came with an empty trailer and filled it, they took many plants. They took organ pipe cactus, from the biggest ones to very small like this (indicating very small with the fingers) and also barrel cactus, lots of them. Trailers and trailers were filled with plants and they took them. But then, when this was declared a national reserve, they started to conserve fossils and plants, and then happen incident I told you of the people that went to prison. They told us it was a federal offense to sell, exchange or give away any plants or fossils. They told us that they were part of our patrimony and that we had to take care of them because it is very valuable. So we started taking care of them. And so when the reserve was officially decreed, around ten years ago I think, they told us that we had to take care of all the plants and conserve every living thing, animals also. So, as I told you, we were not affected when the reserve was decreed and they started to forbid the cut of plants, because we use to take care of the plants even before. For example, in the moon effects, we believe that if you cut a living plant during the moon effect then the plant stops growing, dries out and dies completely. So during these effects, that happens four times each month, we said to people in the loudspeakers of the town we use to inform people.

AL: Sorry, but could you explain me what a moon effect is?

AR: The new moon, first quarter and full moon and last quarter. Every phase of the moon. In those dates we use to tell people of the community, through the loudspeakers that there was a moon effect and that it was strictly forbidden to cut any green palm or trees to make wood for the fire, any green plant was forbidden to cut. So, as I told you, we use to take care of our environment before.

AL: Ah ok

AR: And then, when the reserve started we conserve the environment even more. The activity that we stopped when the reserve started was the cut of the "isote", that was a one of the most important economic activities in San Juan Raya.

AL: The isote? What is the isote?

AR: The Yucca (Joshua Tree, manioc, *Yucca sp.*)

AL: Ah the yucca! I didn't know you call it isote.

AR: Yes, it is the local name. So, making a rough estimation I think that we used to cut more than thousand plants each week. Maybe a thousand five hundred.

AL: So much! And what was their use?

AR: Ah well, you cut the lower part, then cut the head and so you have just the hard trunk and so with a machete we took the hard part on the outside and then we had just the heart, the inside, the centre of the plant that has a very soft fibre. So the fibre was then crushed with a wooden mallet and we crushed it very, very well until it was really soft, we wringed it and then we extended the fibre, like a sheet, three, two and a half or two meters, depending on the thickness of the yucca's heart. Then, we use to put the sheets in wooden casts, one meter per sixty centimetres, we folded them, we stitched them together, cut the pointy edges and sold them by the dozen. For many purposes, for animal food, mattresses, car seats, they told us they were good for all that.

AL: Wow, for everything.

AR: Yes that is why people came here to buy from us, and we sold it. We never went out to sell it, and we never knew exactly what they wanted them for. They just came to buy it here. Every weekend, every Friday and Saturday you could see the trucks going from house to house to buy and making orders and even paying in advance.

AL: And that does not happen anymore.

AR: Back then everyone in the community was involved in this business. Everyone. Imagine how many yuccas we had, because we were doing this for years, it was how people supported themselves. Then we had to stop. That and wood, and wood is still cut by some people. But, can you imagine? If we didn't have the ecotourism activities, even tough is small income, but at least people are working as guides, selling their handcrafts, if it wasn't for that, I don't know how these people could survive. Because as I told you, we were all in the yucca business and then we had to stop. So our economy suffered, our families suffered.

AL: So did the authorities of the reserve came one day to forbid the yucca cutting?

AR: Yes. Well, not really. The people from the reserve came and told us that we couldn't sell the yucca the way we were doing it and they made a proposal of sustainable management, they visited the area and marked it and told us that we were allowed to cut in one small area each month and only some plants and all that and well people were not interested in that anymore. Because it was not going to be a good business each month, the earnings were going to be very little. People were used to cut ten plants every day and so in a week sixty plants and the people from the reserve were letting us cut only twenty plants per week, so it was not worth it. So instead of starting that project we just stopped cutting the plant, people left that activity, we forgot about it. And then the tourism started to work and many people decided to start selling handcrafts and young people started working as guides. So that represents small earnings. Some still cut wood, some have goats, some have cows and well those incomes add up

AL: And do you think that the museum has helped in raising more awareness or environmental culture in the community? Do you think this helps to conserve the environment or not?

AR: No, I think the museum has done that, because we have had many workshops, from the more basic stuff like first aid, client and tourist services, and also palaeontology, geology and all that, and also we have had conservation workshops and it is because we have to conserve what we have, it is valuable. Tourists come here because it is well conserved and because we have good stuff to show. According to some biologists that have come here to make their studies have told us that San Juan Raya is very well conserved. We have really a lot of plants. All this appeals to the visitor interested in seeing nature. It is all very well preserved, there loads of plants, lots of cacti to see: that's why people come! and so that is what experts from the reserve and other institutions have told us in the workshops. They always say the same thing: "Thank God you still have very well preserved areas so you have to take good care of them because that is what attracts the tourists. If you start destroying it then tourists will not come because there is not going to be anything left. So you have to reforest areas that you think are deteriorating and have to take good care of them so that it is even better" So we have to avoid over grazing animals, we have to conserve the soil, put living fences and stuff like that, and we are doing them. It is also because people have more conscience now and because external people have told us how to do it. And I think this is all due to the fact that we have the fossils and plants and that people value it and come to see it. It is very, very important, and it is due to the existence of the museum and fossils and the guided tours. Because we have tours outside in the field then people avoid destroying the environment, so near these paths we do not intervene in the environment, not even to cut wood for the kitchen stove, because even if it not noticeable at the beginning, all the cutting and looting makes the hills poorer. That is why we are trying to take care of it.

AL: And well also, San Juan Raya is an important location in cultural terms because it was around here that the harvest of maize started thousands of years ago right?

AR: Yes also, well in Tehuacán, people say the actual place was Coscatlán

AL: This is very near right?

AR: Well we are practically together. Tehuacán brags about having San Juan Raya as one of their villages. We say that Tehuacán is another municipality but they brag about having us. We are in the limit of the two municipalities.

AL: And that is another important part of the museum right? The gallery where you expose the ancient culture that use to live around here.

AR: Yes, yes.

AL: Why do you think it is important to show those pieces in the museum?

AR: Yes I believe so, although we don't have many archaeological pieces, but we do have some. Many archaeologists have come here to make their research and they have told us that fifteen thousand years ago there were human settlements here, that maybe these people even cohabited with mammoths, because that was more or less the time when they became extinct. They told us that the bones we found in the ravine were probably from

mammoths, so these humans could have been cohabiting with them. So, imagine that fifteen thousand years ago there was people living here! And so we have many ruins, not big and important constructions, but you can find some evidence of settlements, of houses, like clay pieces. Arrowheads, axe pieces made of jade, obsidian arrowheads and all that. In one occasion the researcher took some items to analyze the carbon and told us that it was around fifteen thousand years that people inhabited these lands. That is very important: to know that many, many years ago people lived here. People get really interested in those stories that researchers tell us, for example what Javier is making and that is still in the process, it is very important when he comes and talks to us about the ravines, that you can see how the mountain changes and that indicated the epochs when this valley was very, very dry, or just dry or with lots of rain and all that. And that is very interesting for us, when talks like that are given many persons come, even if they are not directly involved in the museum or as guides. When the information is given then people come because it is very interesting to know. And we have to know our past. Also we have to know because tourists might ask anyone from here and we have to know, to be able to tell them something, at least.

AL: So people do get involved in these activities?

AR: Yes, yes.

AL: They like to know?

AR: Yes they do like to know.

AL: And what about the children, do they get interested too?

AR: Yes, well now it is mainly the young that are interested. At the beginning the tourist guides were only adults and now they are mainly young people, some of the kids that are in primary school are our best guides. People recognize their work and recommend them to others, they mention their names and recommend them as guides. And these kids are only finishing primary or starting secondary school. Kids like these activities very much and they feel very proud of what they have.

AL: Why did the authorities of the museum allowed the children and youngsters of the community to be the guides?

AR: Well, at the beginning they were adults as well but since they also have to work the fields and children have more free time they were available to do the job. So it just happened like that. Now I believe that it was a very good thing because conservation is also interesting for the young ones. They are conserving as well. I remember that many years ago the young shepherds were walking with the goats, me included, we use to take our machetes, because of the snakes and other things, but many times what we use to do was to cut cactus with our machetes, just playing around. And now no, the children are more aware. Sometimes they come and tell me stuff like, "Don Alvaro, someone tied a donkey next to some cactus and it is destroying them". So I have to go and solve the problem. So I do like that the small children come and report me that other children are destroying the cactus, they know now that it is not good to do that. So that is how I notice that these kids are interested, at least small children and young teenagers now that it is wrong to harm the environment.

AL: And what plans do you have for the future?

AR: Sometimes we daydream about finishing the new museum that is under construction. We have the model finished; we also want to finish the camping zone. We want to implement two or three more guided tours and we want to have the new museum up and running.

AL: So, are you going to change all the pieces from this museum to the other one?

AR: Yes, all the pieces that are on display and also the ones we have on storage. We are thinking that once the museum is finished we want to invite the community to donate their best pieces, because apart from what we have in the museum people have many pieces in their houses. And people are saving their best pieces so we want to invite them to donate them and maybe they can get a gratification. We want to exhibit more pieces and we know people have good ones, because some have told us many times that they have nice pieces, but there is no space in this museum so once the other museum is open then they can give them to exhibit. And also we want to put a Tyrolean crossing, we want to have a better road, maybe buy a vehicle to provide another guided tour. Those are our interests. Also we want to make a legal concept of the museum, to have better management and transparency of resources, sometimes people distrust and say that they don't know what we do with the money so we want to have a better management. So many, many things can be improved.

AL: Ok, that is all. Thank you very much for your time.

AR: No problem.

Interviewee	Place	Date
Juventino Reyes	San Juan Raya	7th November 2009

AL: Good night Don Juventino, could you tell me what do you do for a living?

JR: Well I am Juventino Pablo Reyes Hernández and I live here in San Juan Raya, I'm a farmer and I am also a community member.

AL: You were involved since the beginning in the museum right?

JR: Yes we started in 1996.

AL: And how did it all started? Could you tell me about the process?

JR: Well, it was born out of necessity, because people from the community did not know the importance and value of the fossils, people did not know that this was a sea before and that's why we have fossils now, people did not know that. So when people came to visit this place the people from the community traded fossils in exchange for something to drink, some fruits and clothes, whatever. They told them, "Do you want some of these rocks? I have plenty". And it went on for a long time. And in the year 1990 or 1991 I think there were many arrests from the federal police, they arrested people on the grounds that they were plundering national goods. But people here did not know that, we did not have electricity, we did not watch TV, no one read a newspaper. So if the government decreed this activity as a federal crime we did not know about it. So that stopped since 1991 approximately. Until 1996, a person sent by the INI (National Indigenous Institute) or no, no it was someone from the INAH (National Institute of Anthropology and History). The INAH sent a lady of the project of Community Museums, a promoter of the program, and she started to tell us that we should form a committee, that we can exhibit the pieces in a kind of museum and that that was no crime. At the same time, myself, my wife, my brother Cipriano who at the time of the conflict was president of a movement called Base Campesina, and other people dialogued with people from the INAH and told them we didn't want any problems, that we wanted an advisor to assess our options. And so we started to talk to people and in 1996 we asked them to donate some of their pieces and we set up the display in the room of the police station, we are still here although this is not a proper place for the museum. We started to exhibit the pieces in some wooden boards, in a very rustic manner and we started like that with the museum. Afterwards, we applied to more resources, with the help of the Institute of Ecology of the UNAM of doctor Alfonso Valiente. We participated in a project with PACMIC, the Department of Popular Cultures to improve the exhibition of fossils and the history and to be able to put more in the museum. We applied for funds two years, they helped us to write the proposal, and the first time we didn't get it and on the second or third try we manage to get the funds. And the Institute of Ecology of the UNAM and other people that supported us, you can find their names here in the museum's panels, helped us to make the project with the 30.000 pesos of funds. We made a lot with that small amount because we didn't have to pay any salaries because all the people that supported us worked for free, so we used the money to pay for the display cases, the design, the panels, the painting. But we did not pay anyone; the help was for free in this project. And well we are now currently constructing the museum, you have seen it, it is around 600 or 700 metres from here. It is almost functioning. And well now we have the support of other people, mainly the people from the reserve. They have their offices here in Tehuacán and they are giving us their support to do this new museum.

AL: So they put the money for the new museum?

JR: Well they manage to get the money through supporters.

AL: For the building of the museum?

JR: Yes, we are going in stages, because funds haven't been enough to finish the museum so every time we get some money we take a step forward.

AL: And the pieces you are going to exhibit are the ones already in the museum, that the community owns?

JR: Yes, and also the community has more pieces in storage and we are asking everyone to donate more to exhibit them once the museum is fully working. So we have many pieces stored. We are making progress.

AL: Ok and as part of the museum you offer other services right?

JR: Yes and within this ecotourism scheme we have participated in some training sessions of rural tourism or ecotourism or what is called nature tourism. We give guided tours to attractive places such as the Turritellas park, the giant Biznaga, the Dinosaur tracks. The tour that most attracts visitors is the dinosaur tracks that I had the good luck to discover in 2006. People are very interested in those things so they visit because they want to know them.

AL: And who trains the guides?

JR: Well we have had training courses and as new people are coming to do the job well the people that already know stuff transmit their knowledge. We have meetings with them. And we demand them to take care for the site because if we don't take care of it we can do some environmental impact. So we make emphasis that they can't leave any rubbish in any place, the sites, the paths, the trails and well as I told you we all make the effort with the new ones. As I told you they can be young, kids, adults, all kinds of people. We have more people on Saturday and Sunday; sometimes we make the trail on horseback or by bike. We have a batch of bikes that we have managed to buy with money from a project lead by a group of women of the community and we now give the service of a bike tour.

AL: So the women got organized and got that money?

JR: Yes, yes and they represented the community.

AL: And what do you think about that?

JR: Well I think it has been good because like this everyone is putting their part in making projects. Maybe before, many years ago it was the man bringing the food to the house but now is also the woman. We are learning that as well (laughter). And well also the children participate. Everyone, we try to involve everyone in the community.

AL: And well in the case of the guides the ones that already know about the fossils and the plant and animal species pass the information to the new ones?

JR: Yes. And we still have many things to learn but the little we know we tell the new ones and well little by little we are going forward.

AL: And have people from the university come to give a workshop or something like this?

JR: Yes, but not many. We planned that they were going to come to give more training but this hasn't been done. Maybe because they are very busy at work.

AL: But I guess you already know a lot about the plant species that inhabit this area right?

JR: Well yes a bit. Maybe like 50%.

AL: Maybe you know more than the people at the university.

JR: (Laughter) I don't know. We know how to use the plants, how to prepare them or to eat them, but not much more. And well we know our lands better than outsiders. That is for sure. The people from the reserve and the scientists know many other things; they always come to tell us things and stories we didn't know.

AL: And how was the communication with these scientists from outside when they came to build the museum?

JR: I think it went well, they helped us a lot. They made with the museum professionals all the information and we helped in the construction. Also Dr. Valiente kept us informed of what they were planning to do all the time.

AL: And you did not want to participate in the decisions of what information to give to the visitors?

JR: Well at the moment we made the museum we did not have knowledge of what the fossils were. Now we know much more. So we let the experts make the museum because they know much more than us in the subjects of palaeontology and geology and biology as well.

AL: And so for you what is the value of the museum? Why do you think it is important that the community has a museum?

JR: Well, I believe that the value of the museum is in terms of the Mmm I don't remember the word, the variety of Cactus, I don't remember the word.

AL: The biodiversity?

JR: Yes, the biodiversity that is very high here and also we have unique plants in the region and that gives it an important value because people come here to know them and well the things we have in the museum display, the geological history well goes hand in hand with that. Archaeology, Palaeontology, Biology they all go together because they all give evidence to explain what we have now. This was a superficial sea millions of years old where we find fossil records. This has an historic value. And the same with the plants, they share the same story, because there are plants that live many years resisting the temperatures that well, like now that we are at the end of the year and until February nights are very cold and days have so hot temperatures that you can't resist. Since three years ago the heat is increasing, normally the peak here is 38C but for the past two years we have recorded temperatures up to 45C. Many plants have died but others are resisting. So to all the people that come here and show interest in knowing stuff we tell them what we know. We tell them the importance of the plants and the importance of the conservation of what we have. Maybe is not as impressive as a pine or cedar forest, but what we have is of great importance and we have to treat it with respect so that it stays alive.

AL: And in terms of the community, has it been a change, have you seen a change here since you have the museum?

JR: Yes we see many benefits, especially the guides. We get many people on the weekends and the young people that are now going to secondary school, they go to another town because we don't have secondary school here, so they do each day 8 km to go and back. And on the weekends they work as guides and see many benefits. They give the guided tours and they have economic profits. Also some people from the community sell their handicrafts, made of palm so they also win some money, like the guides. So the community sees many economic benefits. I would say that the impact that the museum has had a strong impact here. Around 80% of the community benefits directly and indirectly from the museum. We have many economic benefits and we want it to grow more, but to do that we have to conserve and give a good service. It has been difficult but since we are not so many people in the community we have managed to have control and improve.

AL: Approximately, how many people are in the community?

JR: It is relative but around 200, 170.

AL: And do the people of the community come to the museum? Do school teachers bring the kids here?

JR: We did that one year, or one year and a half ago. I had the idea that the kids of the primary school visited the museum, we have only primary and secondary school.... No, no I'm sorry we have primary and pre primary school only. We don't have secondary school. We wanted the kids to know what they have because the future of the museum depends on them. Sometimes kids from other places come here and ask our kids "what do you have here?" and our kids don't know what to answer. So about a year and a half ago I had the idea that the kids visited the museum and the guided tours as well to tell our kids what we know so that they can be informed of what they have.

AL: And did you do it?

JR: Only one time. It was my idea and it took me a lot of effort to convince them, they said "what for? The kids already know the museum". But a formal visit can inform them more. It is not right that other kids come to learn here and the kids here do not know anything about it. But the interest on informing our kids is growing now, because they are the ones that are going to be here and they have to know what the museum is about.

AL: And has the museum generated other projects?

JR: Yes, like the conservation of flora and fauna. We are now conserving the white-tailed deer, we are trying to have less goats because they are predators, also the donkeys that eat cactus, well we are trying to have less and to try avoid having them loose in the mountains. We have many good agreements, although sometimes it is hard to carry out those actions, but we do them to conserve.

AL: And have you had any problems with someone from the community?

JR: Yes. There are people that at the beginning do not understand but little by little they begin to understand the value.

AL: And do they see the benefits?

JR: Yes, they see that is better to have a small benefit for many years than to finish a plant in minutes. If we conserve them we can profit from plants for many years.

AL: So, do you think that the museum is helping to the conservation of the environment here in the community?

JR: Yes, I think it is because it has the biggest impact to attract people and from it depends that we can have other activities.

AL: And in the people of the community, not only in terms of tourism, but in the people of the community? Do you think that environmental culture, the awareness of conservation has increased, in the children or in adults?

JR: Yes it has increased, now you can notice the interest that people have, young people and adults as well. When we were kids no one talked to us about conservation, all the kids now know that we have to conserve our lands to keep them beautiful. If we don't do that we will end up with "bald" hills that will not bring us any benefit, where we wont be able to live.

AL: Ok and a last question. Another part of the museum represents the cultural history of the people that inhabited here, the cradle of maize cultivation...

JR: Yes, this was the zone, in the valley of Tehuacán. The people living here use to cultivate and feed on maize. So the history of maize begins here because this is the oldest record that scientists have. Now, imagine, everyone in Mexico eats it every day! So we try to tell our visitors this information, so they know more about our community.

AL: And do people show interest in that as well?

JR: Yes in the history of the maize and how people used to cultivate and live.

AL: Do you have other projects in the near future?

JR: Well the construction of the new museum and the establishment of a camping area and to open more guided tours, more paths to walk.

AL: That's it Don Juve, thank you very much. I let you go home to rest; it's quite late now.

JR: (Laughter) Yes, thank you.

Interviewee	Place	Date
Primitivo Reyes	México D.F.	4th November 2009

AL: Good morning Don Primitivo.

PR: Good morning.

AL: So could you tell me how did this project of the museum started?

PR: Yes, Primitivo Reyes. I tell you that what made us... mmhh how can I say it... what made us look for the way to do the museum where the problems we had before. In the past we... we were free, we didn't know about the fossils and that they had a value and that they were... how do you say it... national goods. So people sold them, sold them, well they were not really selling them, more like exchanging them for clothes, food, for whatever...we used to exchange them.

AL: With the tourists?

PR: Yes, the tourists, but not only, to whoever that came here. I think there were many people that were interested in the pieces and wanted to have them, but they were not tourists. I think they wanted to commercialize them, they sold the pieces. Many people came with clothes, food, fruit and well they told us, if you give us the fossils we can give you this, fruit or clothes. Many people were interested in gathering fossils and exchanged them, two or three pieces for a piece of clothing or food. This went on for many years, people exchanging fossils for food or fruit or clothes. Until one day, well we didn't know that we were not supposed to do that, to sell or exchange, and so one day the police came, I don't know who send them, to see if we were selling or exchanging and well yes we were and so they caught a man, Don Cornelio, they caught him, the poor man was not even one of the ones that were selling or exchanging. Like me, as if it were, sometimes the kids do misbehave and change something for food or something. And so this man was arriving into town when the police saw and caught him and charged him with the crime of exchanging and selling fossils. Poor man he was not doing anything. He was just returning from his field or going to his house or I don't know. They took him and brought him to Tehuacán's prison. Ah! And also they arrested another woman from Plan de Fierro, nearby. They took this man, then they went to Plan de Fierro and well they found this woman and she was just standing on the side of the road and they took her in the van. They where not even selling the fossils, it was very sad because it is fair if they had caught them doing the crime, selling the stuff, but no, they caught them and they couldn't defend themselves. They were defenceless and not guilty and they caught them. Police officers say they are good but no, no. Police eh? They do not do they duties.

AL: They do not do they duties, yes.

PR: And so they took this people and they were imprisoned in Tehuacán.

AL: For how long were they in jail?

PR: Mmm, I think they were there like three months in jail and well then they were released. But they had to go and sign in prison every certain time for a whole year, they liberate them but they had to go, every month or something, poor people. They were not

guilty, not guilty. And so well that is what happened and we said ok if its a felony to sell or exchange fossils for food or clothes then what are we going to do, how are we going to earn more if we cannot sell or exchange and we have so many of them. Also we don't have many income sources, so fossils could be a way to earn a living. And so someone said, I don't remember who, told us, you can do a museum for people to come and see the fossils and not to take them with them. And we got organized, we made a committee, ten people, and then we went to Puebla to see if they gave us permission to do the museum and yes they gave us permission to do the museum and well they gave us all the papers there. And so we began with the museum stuff, we started to gather the pieces but to put them in the museum. All the people were happy, they said it was a very good thing that the most beautiful pieces we had were showed in the museum. And so we gather the pieces and that's how the museum started. And I tell you if that hasn't happened to us then maybe we would have kept just exchanging the fossils for food and clothes.

AL: And the person that gave the idea of the museum came from outside of the community or the idea came from you?

PR: No, no many people came. Like always, there are always people coming, people from the UNAM, from many places. And say why don't you do this, why don't you do that and well we thought this was a very good idea and well I don't remember exactly who it was. In that time Don Vali was already coming here and he told us the museum was a very good idea. And, as I told you, we went to Puebla to the office, I don't remember the name of the place where they give you information. We went there. We recognized it was a good idea and we started with the museum and thank God we have been successful. Well I think that. I was one of the ones that started with this, ten of us got together, went to Puebla for the permission as stuff. But well as I told you the history was like that, it started with the problems we had before, before. The people didn't know, we didn't know that it was a federal crime to exchange or sell fossils. Even people from whoever knows where and took the majority of fossils, the best ones, they came in big trucks filled with stuff to exchange for the fossils.

AL: And what about the plants? The cactus?

PR: Yes, before, also with the plants. People came and bought them and we, without knowing it was wrong, sold them. They tempted us, because they knew we needed money and they came and told us "I'll buy you this, I'll buy you that". So we gathered the plants and sold them. But well I tell you that after what happened to that man from here and the woman from Plan de Fierro, when they took them to jail and well they were there for a long time, I don't know how they manage to get out. We gathered signatures here and we signed a petition to ask for their release, but you see in the hands of Mexican justice (laughter). No well, for them if you are not a lawyer, if you have no education or money you are not worth anything. And so well anyway they managed to get out, maybe because, as I told you, they were not guilty. The people that were selling fossils were kids and women and men, but others, not the ones that were caught.

AL: So you formed a museum committee?

PR: Yes

AL: And do you still manage the museum the same way?

PR: Yes, yes, we formed a committee, at the beginning we were only ten people and yes, how can I tell you, well the committee still exists, but not with the same people, that was before. And from those days till now, many years have passed and well every year or

maybe two years we form another committee. So the first one, the one of the ten people does not exist anymore. Now we appoint a president and his team and they are the ones that manage the museum for one or two years, as long as they want and then they ask to be replaced or if the people think that they are not doing well then we change them and appoint another one.

AL: And they are appointed by everyone in an assembly?

PR: Yes in the assembly. And so that's how we change it. Every year or two.

AL: In what year was the museum founded?

PR: Mmm I don't know. I think around 10 years, but I'm not sure. Yes. Well I don't remember. Maybe in some papers I have somewhere, there has to be the date somewhere (laughter).

AL: (laughter)

PR: Somewhere has to be, but now, don't remember.

AL: And, ...

(Someone enters the room and greets us)

AL: Hello! Good morning... Ok, so what else was I going to ask you? Ah yes! In your opinion what do you think is the importance of the museum, why do you think it is important that the community has a museum? What is its value?

AL: The museum, well I think that, I think that it is very important, because it brought us... since we had had problems before well now this brings us economic benefits, gives us a bit of money to settle some money problems that the village has. We have to give money contributions, 100, 200 or even 1.000 pesos we have to give to pay for water, light, church, everything. So we make an assembly and people normally say how are we going to cooperate if we don't have the money. And the museum brings funds, monetary funds and so we take money from the funds of the museum and we solve these problems. And so it brings many benefits, I see it like that, that it brings us many benefits because one cooperates and then we make an assembly and we have funds to do stuff and yes, so it is a good thing to have the museum because otherwise we must cooperate with our money.

AL: And the community has changed, the social relations? Since you have the museum have you seen any changes in the community?

PR: Well I see that it brings us benefits but our life has not changed, we are like very... Well no, no I don't think our life has changed. Although now I could say that we are less worried about how to pay for communal necessities or services, but we still have the same life. Many people do not understand the benefits that the museum brings us and so we have some conflicts and sometimes fights (laughter).

AL: Like which kind of problems?

PR: Yes sometimes and I think it is because we don't know how to value what we have. Or well some people don't and they don't agree with people like me that value the museum as important in the community.

AL: And why is it important for you?

PR: Yeah, well I see that it brings me benefits, because we go to the assemblies and if money is needed and the whole village agrees that we take it from there then we do it. But some people do not value the museum, some people say, "I'm not interested" Some people are even against it, only one of two persons, and say it is a waste because it does not bring us benefits. But if you really see it, you'll see that it does bring us benefits. Yeah but, I tell you it is a personal opinion. Some don't like the museum, people from here, they dislike our museum and say that it does not work or that the only people benefiting from it are the people involved in the management of the museum. But, that's not true the benefits are for everyone.

AL: So the earnings of the museum are kept in a communal fund?

PR: Yes, people in charge, the president of the museum and we have a treasurer so all the money that comes is put in the treasury. The money is kept there and so in an assembly, when we have some expenses to pay then they tell us how much money in the treasury is and if we can take some.

AL: What percentage of the community do you think is involved in the museum? Many people of the community are involved?

PR: No well, as I told you, the majority of the people perceive some benefits. Even young people, as soon as the tourists arrive they go with them as guides; sometimes they even rent their horses. Everyone that wants to participate does it. So we all have benefits. But, some people, only a few, are against, and say that there is no benefit for everyone and that only few people are living from the museum's earnings, but that's not true. We are all involved and we all benefit from it. It's not a lot, but it is something.

AL: And the guides, how did they learn their job? Who gives them training?

PR: Well people come here, like Don Vali that has given us training a couple of times, or people from the reserve and, maybe I'm not super well informed but I know that they come often to provide training. What happens sometimes is that some people do not value the training or they don't learn much and they do things wrong (laughter), but the majority of guides are very good, most of the time small children are better than adults!

AL: And the children from school go to the museum? The teacher takes them or not?

PR: Well to my understanding they have been, but I don't really know what they do there.

AL: Have you seen that the presence of the museum has generated other projects, other activities in the community?

PR: Well, since our museum is a bit famous now it has generated other projects. For example, now we are building the new museum, well the museum, because now we are using the rooms of the police station, so it is not properly a museum. The museum is going to be up there, now we are occupying the house of the police station. Now the other museum is being built and it is almost finished. And so in terms of funding well yes we found the support for the new museum. So yes, I tell you, it is because we have had promotion so they fund us.

AL: And do you think that this museum has helped you somehow to conserve the environment, your resources?

PR: I think it has. Yes.

AL: How? Why?

PR: No well because thanks to the blessing that we have the fossils and stuff I think that in terms of, well how can I say it, we are with the government, I think they have also helped us. Yes, I think it has brought us many benefits and sometimes we don't understand how exactly is benefiting us but yes.

AL: And there is no more looting of fossils and plants?

PR: No, not in the case of fossils, but looting of plants still happens. Because sometimes people foreign to our community come with their cars and take away some plants and we are fighting to stop that. Sometimes we stop the cars to ask them what they are doing and sometimes we find plants that they want to take.

AL: But you are not selling plants anymore?

PR: No

AL: IF someone tells you I want twenty cacti you don't give them to him?

PR: No, no way! I would be in so much trouble. Only foreign people take them.

AL: They steal them.

PR: Yes, they put them in the car and sometimes by the time we notice what they are doing they have already left. But selling the cactus, no, no one does it anymore. No one sells them, on the contrary, we are protecting them from the people that want to take them. Both the cacti and the fossils.

AL: And why do you protect them?

PR: It is sort of a tradition of us, to protect to take care of our land, if we don't do it, people are going to destroy it.

AL: And it's not going to last forever.

PR: Well I don't think we could ever run out of fossils, we find them everywhere. We even make fun and laugh about it, for example, when we were digging to make the well, we dug like eleven meters and we still were finding fossils so we realized that what we have found was only in superficial land, but there are lots of fossils underground as well (laughter).

AL: (laughter)

PR: So I tell you, fossils are never going to finish. Water washes the superficial soil and fossils arise and we have so many that they are never going to finish, imagine, if eleven meters down we were still finding them.

AL: And why do you think it is important to conserve the environment?

PR: Well because we are in a region where the fields are very beautiful, the hills, the mountains. And they are very beautiful. But if you go near here to San Lucas there you'll

see how they have cut all the plants and now is like a desert, they use it for agriculture and the hills are empty. But on our side, on our land we have very beautiful hills, there are some places where we cannot even access because it is full with plants and we feel very proud because we have the best lands, we have the best, and we have to protect it. We have to take care of it, because it belongs to us and well also the animals, we have many animals because the forest is very nice. On the contrary in the other fields, it is so empty that where are rabbits, deer and coyotes going to hide? Nowhere. And our land is very beautiful, we have deer and many other animals.

AL: And why didn't they conserve anything and you did?

PR: I don't know maybe because they have many people that need the land, I don't know, but they finished their lands and we didn't. Maybe because we do not exploit the land like they do. We have other ideas, other ways of life. And, thank God, we have the fossils and we need to take care of it, because it brings us benefits.

AL: And do you think that kids are now more aware of conservation than the kids from the past?

PR: Well yes because in every talk people are telling them about it, like right now that my kids are listening to our conversation. So if we talk about conservation they are listening and gaining more environmental conscience. And they realize that we have to conserve and take care of what we have. And if we tell them every day that we have to protect and take care of it well then they have more conscience and take care of the environment.

AL: And do you think that the museum helps to raise that awareness of taking care of your resources?

PR: Yes I think so, because they are studying, and we didn't. I didn't go to school, I didn't. But they are going to school and well the teachers tell them, they are better schooled. So I think that makes them more interested. The museum teaches them what we have here is important. They learn a lot when they are guides.

AL: I think that's it. Thank you. Thank you very much.

PR: (laughter) Yes, no problem. Well maybe we don't know how to talk sometimes but we have conscience and we take care of what we have.

AL: Yes, of course. And now you have another projects in the future apart from the new museum?

PR: Yes well we have to change the pieces to the new museum, but apart from that, no...

AL: Ecotourism projects?

PR: Well the thing is I'm not very much involved with that work, and so people from the committee, the inspector, they know what there is to be done, what they want to do in the future, what is planned. What they have arranged for their future plans. I don't know. At the moment I am not an authority or part of any committee, I am putting all my efforts in working my lands. I just go to the assemblies to listen and to vote (laughter).

AL: (laughter) Ah ok. Thank you very much for your time.

PR: Yes, no problem.

Interviewee	Place	Date
Minerva Hernández	San Juan Raya	3rd December 2010

AL: Ok Mine so tell me about your work in the museum. What do you do here?

MH: Well my work here is to be in charge of receiving the tourists that arrive and give them all the information that we have and also to give them an explanation of all the pieces we have here in the museum. Also, I give them information about the guided tours that we have outside the museum but in the lands of the community. I also give tourists some recommendations for their visit, like to not dump any rubbish, I ask them to help us to conserve the environment, to respect the guides. And that it is forbidden to take cactus and fossils with you.

AL: So you also explain the galleries?

MH: Yes.

AL: And who gave you the training to do this job?

MH: The training was given to me partly by Dr. Valiente; he gave me explanations, very simple points but very important information. Also Juan (Reyes Barragán) gave me some information, he is one of the guides that knows most about this. Also we have some books on Palaeontology where I can do some research. And when a palaeontologist comes we don't miss the opportunity to ask him whatever we want to know and the same in the case or Archaeology, although in this subject we don't have much training, but we also ask the archaeologists that come.

AL: And have you been to the talks that the biologists give? Or they haven't come lately?

MH: From the time I have been here they haven't come, ah no, no well there was one. He basically tried to raise awareness among us for the protection of animals and plants. But lately we haven't had any training; there has been nothing.

AL: And do you tell the visitors some traditional knowledge that you have or you only tell them what the scientists told you?

MH: Well, sometimes they ask things about the community so I tell them, but no, normally I just tell them about the fossils and all the things I learned with the scientists.

AL: Ok. And you arrived here one year ago right?

MH: Yes around one year, I arrived in July 2009. So one year and 5 months.

AL: And for how long where you outside the community?

MH: Four years.

AL: And how do you see the community after four years in the United States? Has it changed much?

MH: Yes, a lot.

AL: In which sense has it changed? How do you see the community now?

MH: Well when I left the museum existed but I was not interested in it. The museum was just starting to be formed; it was a small thing in the room of the police station. And well I spent everyday working in Tehuacán so I hadn't had contact with it. But when I was away the news arrived that they were finishing the museum, that the tourist flow was raising, that the museum was opening daily and that there were some people working there. Also the news that the dinosaur tracks were found arrived there and I was very excited about all this, but also it was hard to believe. And so we went on the Internet and we saw a picture of the dinosaur tracks and then we believed it. And now that I returned I found some new stuff, like the handicraft house, the restaurant, all are favourable assets for the community. And well since I returned I have heard in the assembly that the tourism is growing, that the number of visitors is increasing. And well since I'm here everyday in the museum I can notice the change. Of course we have some days when no one comes but most days they do, in the holidays is when we have more visitors. And that is making that we have a better life, because we haven't got so many worries with money. We still have and are not rich or anything (laughter) but is better than before.

AL: And talking about the people, have you seen any changes in the people of the community?

MH: Yes, I think there have been a lot of changes. For example now there is a job source for all the women that do the handicrafts, all the palm leaf stuff, now that we have tourism well they are selling their work, their knowledge. And also for the kids in school well also, maybe the parents haven't got many resources, but since we have tourism well they also win some money that maybe can use for their bus fares. Maybe like this more kids can go to the secondary school that is far away. So I think that there is an improvement.

AL: And do you collaborate with the women that are making the medicines and shampoos and other stuff?

MH: Yes, I am also in that group. I think that the group has two or three years working together, but I just entered not so long ago, maybe like six or seven months.

AL: And what do you do there?

MH: Well in that group we make medicines from the plants of the area that have medicinal properties. I think that it started with the idea of a biologist that was making her social service here and she was studying all the plants, when she finished she went back to the city of Puebla. But later she came back and she brought a project to propose to us and she taught the women of the community to make a lot of different medicines, like arnica ointment, coughing syrup made with the Agave plant, arnica tincture or oregano tincture, you saw we have a lot of wild oregano here. So that is how the group started. Recently she came to give us a workshop to make shampoo, so now we are making shampoo to prevent hair loss, to promote growth, etc. We also learnt to do liquor, because if people like to drink so instead of causing damage from the alcohol, we can try to cure them as well! (laughter)

AL: And it only includes women right?

MH: Yes, well there are only like three men involved, oh no maybe four, but mainly women.

AL: And how many women?

MH: I think in the group we are like twenty women.

AL: And where do you sell your products?

MH: Here in the community, where they sell the handicrafts.

AL: And the earnings of this initiative are for who?

MH: For us (laughter). We divide the earnings between the ones that made the products. So everyone has the same quantity of money.

AL: So if this initiative of the museum didn't exist, if you didn't have this job in the museum, what do you think you will be doing?

MH: I think I'll be working outside my community, maybe in Tehuacán, maybe in Puebla, I don't know. I'd have to look for job outside. Maybe I wouldn't even be back from the States. But I couldn't stay here in my community without this job; I'd have to go outside to look for jobs.

AL: And why did you come back from the states? Did you know you could have a job here?

MH: No, I didn't come back because I knew of this job here. I came back because of my sons; I couldn't be away from them any more. And also they didn't want to be without me as well. So I decided to come back and I thought that if I could make it in the states I could try to make it here.

AL: And so you arrived and you got this job fairly quickly right?

MH: Yes, I think that after one month and a half. I didn't take a break at all, I just arrived and in an assembly the people offer me the job. They told me that there was a vacancy in the museum and asked me if I wanted it. At the beginning I said no because I didn't know anything about it, I haven't had any training. But they told me it didn't matter because I was going to learn little by little. So that's how it started. I was very nervous at the beginning, but now I'm used to.

AL: Do you see that the people from here are interested in the museum?

MH: Well the children come, mostly the guides. The smallest children come with their older siblings and because they see that the older ones have earnings as guides they also want to be (laughter). The adults don't come much but the committee informs people in the assembly of what's going on in the museum so they don't really need to come.

AL: Why? Which is, in your opinion, the value of the museum?

MH: Firstly because of all the fossils we have, we always knew about their existence, but we never knew why a rock could have figures. Now they know that this community was once a sea shore and that dinosaurs walked in these lands, you imagine the jungle and the beach and everything. We have remains of this, from millions of years ago. So people can give more value to what they have in their community and also we see that the tourists want to know more. I think that it is important because, well being a community so small having a paleontological museum that no one else has, it is not common, at least not

around here. So I think it is important also so that all Mexicans see what life in the past was like here.

AL: I think that's it. Thank you, Mine.

MH: OK. No problem.

Interviewee	Place	Date
Juan Reyes Barragán	San Juan Raya	8th December 2010

AL: Hello Juan. Could you tell me about your work about museum guide? I would like you to tell me how your work as a guide started? Could you tell me about the process of setting up the guided tours?

JRB: Out all of the guides well I am one of the ones that have been doing it for longer. Along with another three mates we started as guides, with really not any previous experience. So when the museum was in the first building we began the exhibition and people started to come, I think it was around 1996. So people came here to see the fossils and sometimes people came in groups and the people from the tourism board of Tehuacán came sometimes with their own guides and sometimes they stopped at the museum, but sometimes they just came to visit the hills, the ravines, the basin, and other places where they could find fossils and we just stood there watching them, until one day we had the idea of doing it ourselves. We thought it was not that hard to take tourists to our lands and explain them with the little knowledge we have and that way three other guys and I started doing the walks. And so when the tourism guide from Tehuacán came well we had some problems. At the beginning because we told him that in the museum and our lands we were going to explain. So at the beginning we had problems, because they didn't want to accept that we were giving the tourists walks in our own territory. And well maybe they were right, because we had no experience handling groups and explaining to people, etc., but we were also right because we are the owners of these lands and we were just looking for a job and a way to support ourselves and have an alternative in terms of work. So we told the guides that they could bring the tourist up to the museum but after it was our walk to make. We started to make the first tours without any experience, the only example we had were the teachers we had seen explaining to their students and so this way we started to make it. Mostly we made walks along the riverbeds because people were mostly interested in fossils, and so with the little we had heard that palaeontology and geology teachers told their students we started taking people where the fossils were. So we started acquiring the knowledge from the teachers of geology and palaeontology that took their students to these lands. Afterwards we started to practice and we started to do walks, at the beginning they were not very defined, one gully, another one and then a fossil zone. After, in 1998 these lands were declared Biosphere Reserve and so in 1999 or 2000 they started to talk to us about ecotourism or highly planned tourism. And so they told us about the interpretative paths and environmental guides and so we already where doing the job of the tourist paths, but with this we started to define the walks as interpretative paths and we realized that apart from the fossils a big tourist attraction was also the landscape, the vegetation we have. So, we with all these projects in sight with people from the reserve we saw the need to have more training. They gave us workshops in Biology and Palaeontology and also Dr. Valiente started to come to the community and well he also gave us some training in some subjects related to Biology. We started then to know more about Cacti, because before we were very focused only in the fossils. And then they started to explain us more about the importance of Cactus plants and the importance of this land and why it had been declared a reserve. So we started to understand all the beauty that exists in this Cactus landscape. After that more workshops and training were carried out, more people from the community became interested, both young and old people, they saw the work alternative that was available here. People from the administration of the reserve and people from the tourist board of the reserve as well came to give us training. And from 2004 onwards these initiatives were strengthened with the formation of committees and we kept working this way and well now the guides have much more knowledge and more people, especially young people in secondary school have become

more interested. We now have a set of rules of administration as well. New guides are learning from the experience of old ones. In one occasion like two years ago, in 2008 or 2007 we carried out some reunions in which the old guides shared our experiences with the new ones that just joined the guide team. In 2007 Dr. Valiente gave us another set of talks so that the new guides could get more knowledge and more training. So these reunions have also helped to organize ourselves, for the guides and also to other services we offer. We have shared this way. Nowadays we still have young people joining the team and well they ask the old ones and now we also have some books, and I also share my experiences with them. And so if I am here well I share with them and when we are not well there are the books and thesis and so they have to read about it. This way you can specialize your knowledge. For example we get many people that want to do ecotourism and they are interested in the plants, the scientific and common name, their uses, how people use it, how people live in the area. So when you specialize your knowledge well you learn about scientific names and you can inform yourself in the books and other publications we have here. You can become specialized in certain subjects.

AL: And when people from the reserve administration or people from the university were giving you these workshops did they integrate the knowledge you already had, for example the uses of the native plants, with what they were telling you? Or did they come only to teach you?

JRB: No well they thought us in more scientific ways, they talked to us in more scientific terms. So it helped us to reinforce what we already know. The other knowledge that we have is passed through your grandparents, your parents and so all that knowledge forms, lets say, the main basis for the guides of ecotourism. And so they gave us more information in scientific or technical terms.

AL: And then you integrate it when you explain to the tourists, the traditional and the scientific knowledge?

JRB: Yes, we mix the information when we are giving the walks. Sometimes visitors are more interested in the native uses of the plants and some, like high school or university students want to know more scientific or technical data and then we use the knowledge that we got in the workshops.

AL: So well the guides are part of the museum, right? Or are they are independent? Is it the same committee that regulates them?

JRB: Yes, yes, well they are the same. The museum is now seen as the operational centre, is the main basis. The same committee that administers the museum also organizes the talks and the knowledge exchange and all the workshops and they are the ones that advertise the walks and they set the prices. However what each guide makes, in terms of money, is for him. Our earnings are not communal.

AL: And you have been involved in all this process of creation?

JRB: Yes, at the beginning, when we started to write the proposal for the support of PACMYC I was actually the president of the museum. Recently it was my turn to be president of the ecotourism activities, well so I have been very involved with the execution of projects related with the museum. I have been participating fully in this process.

AL: So, last year, people told me that people from Margen Rojo made the design of the galleries of that old museum. So what about this one, who decided how they were going to organize it? Who designed it?

JRB: Well, given that we don't have many resources...It's not like we present the project and people give us money, not many institutions have been interested, so we have worked in stages. When we started well we got organized in the community and we registered it at the INAH and Dr. Valiente got interested and he helped us to present the project to PACMYC to get some support of the project. So we got the support of PACMYC and he got the help of Margen Rojo, that are museum designers and make museography and so they helped us with the museography. That way we set up the first building where we had the museum. Well afterwards in this new building the design was made by an engineer from the municipal agency of Zapotitlán Salinas, because we had their support. And from there, well we haven't really applied everything as they told us because sometimes to stretch the budget we have had to make some modifications and so sometimes the design or the accommodation of some material is different. Also because we are working in stages and we have tried to stretch the budget as much as possible.

(Interruption)

AL: So you were telling me about this new museum...

JRB: The design of the new construction was made by an engineer in the town of Zapotitlán and well they made the new design and from there with communal work from people from the community we started to work. And we submitted the project for funding to buy material. From there we waited for two or three years and then we submitted again the project for another funding and we started the construction of what is now where the reception desk is, afterwards we secured a funding from the World Bank and with it we finished the two other rooms. So it was in this way that we built the new buildings of the museum.

AL: So in this occasion who told you how to display the objects and who painted the dinosaur murals? Or how did you decide all these things?

JRB: Well normally everything is decided in the assembly, before anything is done. In this case, when the fossils where moved to this new building. In the old museum we had a design done by the people of Margen Rojo, and it was made for the other space so when we passed the fossils to this new space, well it was a race of the tourist president and another colleague that was working at the museum as well to equip the two galleries. Also the World Bank was financing our project so they came to visit us to make sure that we were using the resources as we told them, so they came and saw the two finished galleries and so they told us that we should open with this two galleries and then assess how we where doing and ask for more support if we needed it later. So the idea was to open straight away with what we had. So we all started to rush to finish in the date that they had told us and we made an assembly to hire a painter to do the murals. And we had been working in the museography with Margen Rojo but since we didn't have much time well we couldn't work with them again, they couldn't be part of the project, so we couldn't have a well-made museography. So we did it, the people from the community, some students of Dr. Valiente also helped us to arrange the pieces, and we documented ourselves watching books and stuff. But we are not specialists in museography so we lack a museographic design to make it better. We're still working on this new museography project with Dr. Alfonso so that when we finish all the galleries we can have a better design.

AL: So in the case of this new museum was it the community that decided what to exhibit and how to display it in the galleries?

JRB: Yes, exactly. We managed to get more fossils and for that we had someone from Dr. Vali's lab helping us, for the identification of the specimens. But that was all, for the rest of the museum we took the decisions ourselves.

AL: And so what is the idea that you have for these two unfinished galleries? Do you have another project?

JRB: Well we design the archaeology gallery, the palaeontology gallery, the reception desk room and for the other two galleries we haven't decided what to do, some people think we should put more fossils, and there is controversy in the assemblies of the community, because some of us want to make this two rooms a bit more different, so that we can show the visitor different things. One option would be the natural history of the place, maybe some environmental education, so that the museum has more diversity and the visitor can see different things of this region. The other idea is to put more fossils, but at the end we will have the same species of fossils several times and maybe it would be much cluttered. So we're thinking that we might do something different in the other two rooms but also to integrate the four of them, so that they share the same idea.

AL: And so how are you going to do this, are you going to decide via an assembly?

JRB: In reunions and assemblies and well we will also count with the consultancy of experts in the fields and so we will try to make the better use of all the rooms we have.

AL: So how do you find out about funding initiatives?

JRB: Well we don't have access to internet, we don't even have newspapers, so it's through people from the reserve coming to tell us, or people from the university. Sometimes people from the team of Dr. Vali come to tell us if there is some funding opening and then we apply and see if we get it (laughter).

AL: And tell me, have you seen that the presence of the museum has changed the community? Have you seen any changes in the social dynamic or in the way people see our use the resources they have? Or maybe in terms of work opportunities?

JRB: Well the museum has, well I think there has to be a change. Before we had the museum, or even before we organized ourselves to have a museum well we had this whole story of selling, exchanging and giving away fossils, partly because of the necessities that people had, partly because of ignorance of what fossils were, to many they were only rocks with nice drawings on them so we sold them to visitors and well afterwards we knew about the laws that prohibited it. Before we didn't know anything about the laws, we didn't even have electricity so we couldn't find out. In 1990 two people from the area were arrested and this was a situation that marked the life of people here, especially the people that were relying a bit on these exchanges and were doing it every day. After the arrest of these two persons, people got scared and went to throw away their fossils. I remember my parents sent me to throw away the fossils and to bury them afterwards. And well people didn't want to know anything about the visitors and hid from them. And we spent like two years like that and then some organizations came to us, to defend our human rights, they said, and to help the people that had been detained. So from then, around 1993, we made a big assembly of all the community and people from the organization and so well the first question that was asked was "what do we do now with the fossils if we have too many?" so one of the options was to start with the museum, so we called the people to rescue all the fossils they still had in their houses and donate them to the museum and we put them all in the building where the museum previously was. From that moment we started to have people coming to visit the small museum we had. For me the change that was very

important was when we had the total prohibition to sell fossils. That had a very big impact so we had to think of the new step to take and in this case it was the construction of the museum. We didn't have the option to sell the fossils; we didn't have the option to exchange clothes or food for them, or to sell them. So there was a change in the life of many people. So we started to work in the creation of the museum and by 1996 the first guides started to join and so it started to be a new form of... work... well now it is a new form of work but in that time it was a form of earning a bit more money, because we only lived in the tips that the visitors left. In 1998, with the declaration of the reserve, so well the people that were more affected with the declaration of the reserve were people that were very accustomed with their way of living and work and when you start to tell them what to do or you restrict their actions it doesn't go very well. They had their way of living and sometimes they don't manage to understand in a couple of years, some time has to pass to let people get used to the new way of living. So the declaration of the reserve had also an impact in our lives. So the museum and all the tourist guided walks have been an alternative to complement our work, an alternative that is part of the solution for unemployment an immigration that is very high in the zone. As a work alternative I see now that many young persons are seeing it as a viable source of professional improvement and to give more high quality services. In my personal experience this generates work and means that I'm able to stay in my town. For the women that make handicrafts, well before this they were not doing so many things, they knitted with palm leaves but they just did stuff for their homes, or they sold sometimes some *petates* but only for three or two pesos. Right now we have six or seven artisan women that are everyday in the house of handicrafts and there is people that buy their products and the work they do is valued in a better way and paid well. So it has contributed to those families. Another advantage has been for other people that offer services to visitors, like the restaurant, the cabins; they are a source of work. In relation to the social dynamics of the community, well people that are more integrated in the tourist service we are very focused on the natural ecotourism activities and well we are very aware of the damage that the tourists can have in our community. One of the things we ask the tourists that visit us are to respect the customs, the traditions that we have here and also in terms of the environment. So we are working in that way, trying to find a balance so that there is less impact in the change of social lives in the community. We want to maintain it as an alternative source for work, but we want to maintain equilibrium.

AL: And in terms of environmental awareness do you think that people have more knowledge now or the care of the environment has always been a part of your local knowledge?

JRB: Well in my point of view, in relation with the talks we have had with the people from the reserve in relation to nature and how to take care of it, I believe that it has had an influence. All the talks and training that the people from the reserve come to give us. And well a high percentage of the community is seeing that the tourism has benefits, so they see that people come to see the landscape and they like it to be clean, sometimes they even congratulate us. And well sometimes us in the assemblies, well actually this was an initiative of a group of women from the community, they started to get organised in terms of collecting rubbish and recycling, so they started to do all this kind of work. After we put the same program for the kids in the school. And also with the talks of the people from the reserve they told us it was very important and also we see that it is also important in terms of tourism, to maintain it well. So I would say that we have more environmental culture in the community now. In relation to the degree of conservation that we have here, well for me, I think that people from here, even if they don't know the concept of environmental conservation, have always had this culture of conserving our environment. For example we had this tradition of the "moon effects" for example, in every moon effect no one touched any tree, any new moon, and any full moon no one cut or touched any tree.

So even though we didn't have the concept of ecology or conservation we had practices that we inherited from our ancestors and understanding and experience living in the area, this local knowledge has meant that we have good conservation practices in the community.

AL: And have you seen that since the declaration of the reserve and the creation of the museum that other projects of sustainable development have been created, besides the museum?

JRB: Yes, well since we started all this ecotourism business well I see that other young people have become interested in the sustainable development issues and through them new projects have been generated. New projects that can help us, because they generate employment, so people can have a well-paid job in the area. So for example we have the project of the traditional medicine or the planting of some useful and important plants, like *Agave marmolata* or *Agave pichomel* so that we can use and make profit from it, but in a sustainable way.

AL: OK so you talk about some dialog between people from outside and the community, from your perspective as a community member how did you see this dialog between the experts and the people? Did they find a bit of resistance from people of the community, maybe people said "how can you come and tell us how to live"?

JRB: In relation to the declaration of the reserve?

AL: Yes, and also in respect to the training and talks that these people came to give you.

JRB: Well, at the beginning, well as with everything we were not used to or we didn't understand them. We were used to another way of life so there was indeed some questioning and resistance. "Why are they coming here to tell me that I have to have less goats?" and stuff like that. There was a lot of speculation about what the new reserve meant, we thought they were going to take all our goats away and they were not going to let us cut anything anymore. Actually there was one species of plant that was a very important part of the economy of the community and when the reserve was declared it completely forbidden to cut, the *Isote* (*Yucca* sp.). For us it was a basic part of our economy and it was more or less well paid, so we used to cut it a lot and they completely forbid us to cut it anymore, and this had a strong impact. So there was a bit of resistance from the community to accept what the people were coming to tell us, at the end we were the owners right? So people were saying that if we are the owners of these lands, why they are coming to tell us what to do with them. And well still now some 70 or 80 percent of the community it is convinced that we have to take care of the environment and to have more sustainable project, but there is still some people that maybe need more time to understand all the changes. So yes we have a bit of resistance.

AL: And what about the creation of the first museum, the scientists and the museologists came with a project that they had designed and presented it the community. Was there any resistance in accepting someone from outside making these decisions in your museum?

JRB: No there was no resistance. Well I think because of two things: we know and we appreciate Dr Vali and what he does for us. He has helped people here, so people like him and we trust that he wants to help so he has our trust. Also well these people were experts and we, well the majority of the people of San Juan Raya did not finish primary school. So we don't know many things, we knew less regarding the fossils and all that back then. Now

we have more knowledge. Still they are the experts that came to help us and we trusted them.

AL: And so tell me if you were not working in the museum or the cooperative what would you be doing?

JRB: Well I think I'll be in the United States. I am here, well, I really like the... well I am one of these persons that think that I can do whatever other people can do. I know many young people like me, or maybe even younger that are in the United States. And so I think that there is a lot of work here, although the pay is not much, but anyway you can look for stuff and try to find some small works anywhere. But if I didn't have this I'll be in the United States as an illegal immigrant. Our options are here or there, maybe that is why some younger people are getting interested in these projects. So I can also help to inspire them and to demonstrate that it is possible, that we can create job opportunities in the area.

AL: Is there a lot of immigration to the United States in this town?

JRB: Yes, in comparison, well if we take into account the number of inhabitants we are in this community, we are very few, like 240 inhabitants, maybe I would say that around 35 to 45 percent of the population is in the States working as immigrants.

AL: And mostly these are young male persons right?

JRB: Yes, there are also women that have gone as well, but mostly are young men.

AL: Ok and to finish with, tell me what is the value or importance of the museum, in your opinion?

JRB: Well I think it is important in terms of the rescue of the culture and identity of our community. We still have a way to go in these terms because we still have to integrate this a bit more, the things we have been exploring mostly are paleontological. We still have to integrate a part of the history, culture of our population. So it is important to have it as a way to conserve the culture of the community. On the other hand, as a work alternative, or a complementary job, especially to the people that are involved in the museum, that is now the centre of all the ecotourism projects. It means work to many young people that are interested in this project. So it has an importance at a social, cultural and economical level.

AL: Ok, thank you very much.

JRB: OK, you're welcome.

External collaborators

Interviewee	Place	Date
Dr. Alfonso Valiente	México D.F.	1 st November 2009

AL: Good morning Dr. Valiente, I would like you to tell me about your work with the community of San Juan Raya, how is your involvement with them?

AV: Well, I started going to the valley of Tehuacán in 1981, that was the first time. I went as an assistant; I was doing my bachelor degree. Since then I started to work in Tehuacán doing the flora registry, that was my job and we made several registry lists. So one of the communities, well my work covered many areas of the valley and one of those areas is San Juan Raya. The process with the people was a bit slow, especially because they take everything with great calm, so they take long to give you permission to work. Generally what we do is ask for permission first, then after you have permission with the community you can work there and even leave experiments there, the problem was that sometimes you went to the field and marked lots of plants and then people removed the tags, just because they were curious, or maybe the kids that are shepherding the goats, etc. So my work has always involved working with the people, to be in contact with them. The way this started was when I saw that nothing was being done to improve the people's living conditions, and I'm talking about the time when they the reserve was created. That put some restrictions on the people, I always opposed to that because it is impossible to have a viable reserve if you don't give people alternative options to survive, especially because people here live of the land, either transforming it for agriculture or collecting plants. And so, what happens? Poverty has a direct relationship with habitat destruction, especially in terms of transformation of the environment. So the relation with people from San Juan Raya was built like that, working with them, they opened the door for us and once they accepted us we started to collaborate with them. Once, at a meeting, when they really trusted us, people asked me if we could do something with them to improve their living conditions. Then I saw the notification of the grant given by the Department of Popular Cultures (Culturas Populares) to make community museums and so I propose that they used what they had in their environment, not only this land is a Cretaceous fossil deposit, also when Mexico was divided in two by sea the beaches were precisely in this area of Puebla. This was a reef, so this area has the best or one of the best fossil deposit of marine animals of 100 million years ago. Then I thought they had to take advantage of this, a phenomenon that is not found in many places, and it is a place that has been thoroughly studied, especially from the paleontological point, mainly by people of the Faculty of Sciences (UNAM, Mexico) and other researchers. Then my contribution was like a reward, as a thank you gesture because they let us work in their lands and do long term experiments. So that is how the relationship with the people started.

AL: So, in regards to the creation of the museum the community told you, let's do something, without much idea of the project they wanted to do and you proposed a museum?

AV: Yes. I told them "let's go this way" the idea is to take advantage of the area and the tourist flow they have, they get visits from schools and university faculties. And then a parallel situation happened. The Education Ministry decided to reward the best primary school students of each state of the country and for some reason they decided to take them to see the fossils of San Juan Raya, so the people of San Juan Raya called me one day and

asked me if I could go the following day to explain the fossils to the children, that many children were going to arrive in lots of buses. So I went that same day there, left my house at four in the morning. And from that experience came the idea of having a place where visitors could enjoy, especially because of the interest of many people to see the fossils. Back then they had the fossils in wooden boxes, but they had an impressive collection of ammonites, and well other things. So we decided to make a community museum. So that is how it happened, with this situation, also as a way to pay back the favour, and well friendship, we are good friends and well I was also interested in helping to improve their life conditions.

AL: So tell me how was the process of creation of the museum?

AV: Well look, first we had that talk, then the authorities of the community called for an assembly, as you know, everything is communal property and so everything is decided in an assembly. I think this is the best democratic system, communal and cooperative property systems. It is the best, everything is decided in an assembly and with open votes, people cannot hide their intentions, everything is very open. So the assembly was carried out and we explained how this could be done, but the first thing we said was that we had to have the support of the whole community. So we talked a lot about the subject in that assembly, I took the papers of the grant application and with a typewriter we filled it. Someone once showed me pictures of that day, we put the typewriter on the hood of a pick up truck and we were typing there. With the whole community we discussed the main points and agreed on what people wanted, then a small group, including me, filled the proposal. We submitted it and the proposal was accepted but the money never arrived, we never knew why. So then next year we resubmitted the proposal, with a few changes, and we got funding. We had to go to the authorities in Puebla (the capital of the state) where the offices are and we got the money. I had worked with people from a company called Margen Rojo, which are excellent museographers, they did the Museum of the Desert, they did the Mexican pavilion in the Expo Lisbon, I have some documents of their work, it is impressive what they do. So I know the director, Ofelia Martínez and I told her, "Are you interested in doing charity work?" And she asked what it was about and so we had a meeting and I told them the kind of museum the community wanted to have and so they wanted to see the community and the building, and so people from Margen Rojo went there, they took photographers and everything. And they accepted as long as we gave them the museographic script. So we did the research and we made the script and we defined a series of ideas and so I had the task to find diagrams of how the sea was, how Mexico was divided by a sea 100.000 years ago, how fossils are formed and the human settlement part as well. It is a very, very small museum, you're going to see it, and it has a room where people donated some pieces like mortars, clay pieces, etc. And so we did, well you know that this is the zone where the oldest records of maize have been found, the cradle of Mesoamerican civilization and in some way that makes this area attractive too. So we did the script and then the people of Margen Rojo started working on it and PACMIC, the people from the grant, gave us the money 30,000 pesos. Don't think the money was a lot eh? It was not enough but we did miracles with it. The display cases were made, the selection of pieces, we had to make a selection because there were too many pieces and well we mounted the exhibition. That was the process. People from the community helped all the time, painting and putting the pieces and cases, we all cooperated, Margen Rojo people, the authorities, us, people from the community. We have pictures that show the whole process. We slept outside in the camping area. It was a lot of fun

AL: And the script? Did the community participate in the making of the script?

AV: No. The community of San Juan Raya has very low schooling. This is one of the poorest regions of Mexico. And well, now they can give a whole lecture on fossils and similar subjects, but back then no, I mean they had an idea of what they wanted to exhibit, but more in the sense of the pieces that they had and wanted to exhibit, which pieces to exhibit, who had good pieces in their homes to donate, they decided what to exhibit at that level.

AL: That happened in the assembly that you told me about?

AV: Yes, in that assembly. But all the issues that had to do with the script were mostly made by myself, we made it, and so that was the process. People participated by working with us, with their hands, painting, fixing stuff. But I have to tell you that at the beginning there were not many people involved. At the beginning we faced scepticism and other people did not know exactly how to participate. And well, now you are going to see it, people are super involved with the museum.

AL: And this lack of participation could not have been due to a lack of involvement of the people in the community in the decision making process?

AV: Well maybe, although we did involved them, as far as we could and their knowledge permitted. But I also think it has to do with the relationship with governmental agencies and other external people. I can tell you that like many people from villages they are used to getting help from the government, where for example, a guy from the government comes and says "let's build a daycare centre" and next day the project is closed, and then another one comes and says "let's make a program of improvement of cattle farming" Then money comes and people participate and that's it, but these are not proposals that come from the base, these are not proposals that arise from their needs, they get the funds and then when the money stops coming the project is over. Why? Because it is very poor people, I don't know what the schooling level is but it is probably not very high and there are a lot of people in the United States, although now many people are coming back because they don't make it in the north. Then it is a town that has a population of kids, women and elderly and a floating population of men that come and go from the States and sometimes stay here for longer. It's a town with these characteristics. I think that the individual schooling level is very, very low.

AL: Ok. In what year was the museum built?

AV: Well, I have the data somewhere. It has around four years. I can give you the exact data of when the proposal was made and everything, we have everything written down with dates. I'll look for it. Four or five years, I think it was in 2004, I don't remember very well but I can give you the data later.

AL: As you just said many government initiatives start one year and next one they are not functioning any more or they simply end and with this museum the story is different.

AV: Yes because people have realized that they have funds, for example the women have organized, imagine, they have now formed a NGO or something and recently they have found funds to buy mountain bikes, so the visitor can now make the tours on a bike. So projects like these have been detonated and the detonator is the museum so it is different from those government programs that when they start giving resources they simply end and people are not interested, why? Because they are proposals from the top down that have no consensus in the community and people do not see their importance or are truly not important for them, I don't know. In this case the amount of funding they have managed to secure is impressive. I can tell you that in assemblies sometimes they need to

send someone to Puebla and well everyone has to cooperate to buy the ticket and these people before didn't even have fifty pesos (around £2.50) in their pockets. Then the museum has served as a detonator to attract people, to get people to do other activities, like handcrafts, now they make very nice things, little animals and other thing made of palm leaves. So there has been something like a macroeconomic phenomenon that has created an improvement in the life conditions and it is noticeable. And people see it like, for example, if you are a guide generally visitors give a tip, sometimes it's a ten pesos tip, but I have seen tips of 250 pesos. They never had that amount of money in their pockets. So people say now, we have to take care of this, they have stopped cutting the forest. They still have other productive activities, like the goats, they still have cattle, because it is a good and quick way to have money. So people have realized that this is relevant for their lives and it has had a positive impact in the conservation of the environment. And that was one of our reasons to collaborate with them: to make people lives better and to get them interested in taking care of their resources.

AL: So, would you say that there has been a positive change in the quality of life of the people from the community?

AV: Yes. I think so. Of course it has, and I'm sure you could monitor the change, in some way, you can see what has happened and what changes this has brought to each person. Now you can see that people get involved in being a guide. Then apart of the money they make, they get trained to do the job, they have asked us for workshops on what kind of rocks and plants and animals are here. That is why we did the guide books. I gave you some right?

AL: Yes, yes.

AV: That is why we did the guidebooks, because it was a form of having written documents to allow people to train and revise anytime they wanted to. And well these people know the birds because they have seen them their whole lives, but now instead of telling you, this is the sparrow, or whatever, they tell you the scientific name. And if a visitor comes that is particularly interested in seeing birds they know exactly where to take him. So there has been synergy between the involvement of the people and the funding they have secured. During Easter they have many, many visitors and that finally translates into resources for the community, that is far away, that is poor, in the middle of the mixteca, and well this has given them another options. They have stopped cutting the trees and plants, have stopped doing lots of harmful things, and people are now interested in having a nice, as they say, a nice environment.

AL: Of course. So not only the quality of life in economic terms, but also in terms of environment conservation?

AV: That's right. And look, we did the experiment of taking people from other town that were reluctant to work in projects like this, we took them to San Juan Raya. There were also Zapatista communities that also wanted to do a museum and that's why we got in touch with them to share our experience and we organized a trip from Zapatista communities to San Juan Raya.

(interruption)

AV: And it was a very interesting thing, because well in their communities it rains a lot, is a evergreen rainforest, there are a lot of natural resources there, you cannot starve to death there because at least you can go and cut a banana o you go and cut a mamey from

the tree, right? But here, this is a really poor area, and to come here had a very strong effect on people from communities of Chiapas and Oaxaca. Because they saw that they had something, they are very poor but they are very well organized. And well there is always going to be some trouble, there is always problems inside the community, but in spite of those problems they are organized and work together and I believe that has been a detonator. And well they have had problems as a community. They recently had a problem because there was a new teacher at school that some didn't really like and well there is some division, but you can see that people, in general, participates in the museum, everyone takes part there. So in that sense, you can see that it works. That is a project that really works, that has relevance in the context of having modified their way of life and also has had an important impact in the conservation. I'm completely sure of that.

AL: And how can you measure the impact? How have you seen it from your work as a biologist? What change have you seen?

AV: In the people?

AL: No, in the conservation of the environment.

AV: Well, something that has to do is the knowledge that people have now, this makes that people notice stuff they didn't before and stops them from doing some activities. Just to mention an example, they still have goats, but the amount has diminished in time. Although goats have a very important role, and we have insisted that they do not have to get rid of all the goats even if the people from the reserve say they have to, because it is the most important economic activity the have. Also, you see that they don't cut down trees, they stopped that. They have their own rules and are not allowed to cut anything green. And before, sometimes, you could find a tree that was cut and left to dry out, once it was dry they carried it home, that way they could say that they found it dry and were not cutting anything green. So they do have rules that work very well, curiously, in spite of what people say, these communities have an organizational scheme that works better than just to do reserves. I would dare to state that the creation of the reserve has had negative impacts in the conservation of the environment, more than positive ones. And you can see it in an aerial photograph, or well in a sequence of aerial photographs. The reserve has more or less ten years, maybe eleven. And you can see what it meant in terms of the rate of tree felling when the reserve was declared, the rate raised considerably, it had a tremendous impact. Why? Because people were afraid of their lands being taken from them so they were angry and disagreed with it. So people started to cut down the hills and fenced plots of land saying that those were their properties and some of them were in deed private properties but not much. And the land transformation was very quick in the first years of the reserve. From one day to the other you could see five more hectares being cut down, the whole environment was being destroyed, even if they didn't use it to crop. So this has a strong impact because now you can see that they haven't cut any plants for a very long time, the agricultural frontier has not grown. On the contrary, now you see more people involved in the museum, at least a big part of the community, that was not involved before, because they couldn't see the importance of it. So one part is the conservation of areas, the agricultural frontier is not growing, a shepherding route has been defined and they avoid getting in some areas, they make a rotation of areas were to shepherd goats, so that the environment is not considerably damaged and it does not look bad when visitors come. So, some activities that were anarchic in the past now have a set of rules. And then also, they ask, that is the other thing. Sometimes they call me here in the lab and tell me "Hey Dr. Vali, they call me, Dr. Vali, we have this situation, can you help us?" and so they have very regulated activities. And another change, that I love, before men never take care of the children, that is for women, and you know how it is in this country....

AL: Yes...

AV: So, what I found interesting was that when the women, that are very proactive, won the funds to buy the bikes, I arrived to the village and I see all the men with the kids, taking care of them. And so I asked "And now, what happened?" " No well our women are not here and so we are" So, reluctantly they had to take care of their children, they had to be babysitters as many said, one of them was Silvano, which is a very bubbly guy, you are going to meet him. But they said, well anyway, the women won those funds so we have to support them to succeed. So these kinds of things I would have never imagined to see. Those kinds of changes imply a change in the macho scheme and that is very interesting. I love that story, we laughed a lot because that day we had to go to the fields and Silvano came with us and had to take his little girl with him and he was feeding her and taking care of her and he never, never did that before. I think that is a really good change. I have many stories like that. And yes, coming back to the point, I was drifting from it, the conservation issue, you are going to see it, is impressive. They are not cutting down any trees and now they are making sure that no one is throwing rubbish. They have rubbish bins on the streets, funded and placed by the reserve. They are promoting new strategies to make their life better, their village more beautiful. They are planting some trees. One day I told them "We have to reforest, at least the main street". The town is really, really small, you don't give a penny for it, sometimes it seems like a ghost town, sometimes you don't see anyone. But I think that has enormous advantage, since it is very small it is very easy to do certain things. And this town even started to have some influence in other towns, people from other villages started to come here to look at what people had done here. So I think it has had that effect as well and I think that is very interesting.

AL: So in terms of influence outside the community has the museum generated other projects?

AV: Yes we did the pathway of the macaws. It turned out really nicely. So the idea arose because we took the authorities of Tecomavaca (another community close by) to see the museum of San Juan Raya and he was very impressed. So then he agreed to do the macaw pathway and so we found ways to do it. I got the money 275 thousand pesos (around 15,000 pounds) to do the signs and screens, the money was provided by the Foundation for the Cuicatlán Biosphere Reserve, a civil association that promotes projects here. They paid for at least a third of the vegetation guide as well. Very active people that generate many funds, with donations and stuff like that. People like Emmanuel (a Mexican pop singer) and Hernandez, the painter Sergio Hernandez from Oaxaca, he is very good. So funds come from there to carry out projects. So well I think that it has been, I forgot why I was telling you this but the idea is that this Foundation has given money and it has had some impact. Going back to the museum yes, it has had some impact in other communities. And you know? The difference is that the authorities in Tecomavaca are different that the ones from San Juan Raya, one community president starts with great enthusiasm and vision and starts to run the project very well and then authorities change and well. This first president did not have much contact with people from the reserve, he was in touch with them but had never worked with them because they have had some problems before, and so after him a new president comes and the whole process slows down. These projects depend a lot of the individual human component that make the projects get stronger and work well.

What has happened in San Juan Raya is that this situation has been stable for a while, there is a committee that changes, but people always want to do the same or better that what the old ones did. There is always the component of trying to keep a good image in front of the others, so this is good, because at the end the project is working well.

So yes, this project has detonated other ones, there is another museum now in Santa Ana Telostoc that we should go and see. So it has generated stuff, and in this case it also

created rivalry. I always insisted with the teachers that we should find other alternatives, use other things, like the masks, I told you right? About the masks that were found in Santa Ana Telostoc.

AL: Yes.

AV: And well also try to do a different thing to make a touristic circuit. That was what I was trying to promote, make an assembly with all the nearby villages and authorities and tell them, look, do not compete, you should cooperate, and let's define a touristic circuit that is attractive. After San Juan Raya people don't want to see other fossil museums, because this museum is very good and so they don't want to go there. But if you say, apart from the fossils this other museum shows you something different then people would be willing to go. So it has unleashed stuff, from envy to good things, so it is working.

(interruption)

AL: So then, when the community tells you, let's do something, we want to do something to improve, why did you proposed a museum, why a museum and not another thing?

AV: Well look, first of all this is the most important fossil deposit of the Cretaceous in Mexico. I'm most certain. The palaeontologists tell you that they are still finding new things here, so after many years of studies they are still finding lots of stuff. That is the first thing, that this phenomenon is not easy repeatable. And also the side event of the primary school kids that came to see the fossils from all over the country and that they called me to explain fossils to them. That was very good also because I had lots of fun, because of the fascination that fossils generate in kids. Life in the past excites the minds, especially the kids' minds. So that was a side event that was very important and the other one was that, I don't know how but the announcement of the money that the Department of Popular Cultures was giving to make museums, I think I saw it in the paper. And so the things add up, the people in San Juan wanted to make a site museum and the money was exactly to make community museums so it was only natural that we decided to make a museum showing the most distinct attribute of this community, to be a good location for fossils. That it is something unique that make people want to come. And well people do come, like those kids right? I remember it was that day that the idea of doing something in San Juan Raya that allowed people to improve their quality of life and helped conservation, started to develop.

What I think, and maybe people that are in the CONANP (National Forestry Commission) or in the reserves don't see, I mean it's good to make reserves but they cannot forget that there are many people living in them and that in Mexico there are 57 ethnic groups and they seem to be invisible and that it is ok to make reserves in their lands without giving them more options to survive. So it is nice to make reserves to feel proud of your work, but what we need here is... Well the important component of our culture, the one that is alive, because we have the death one, the pyramids and stuff and we all feel very proud of it, but the heirs of those cultures are alive and it seems like we want to exterminate them, don't help them at all, it is as if we were embarrassed of them. Well that is my point of view and I even want to curse them

AL: (laughter) It's ok...

AV: These guys want to hide them or I don't know what's with them. They are the living component of our ancient cultures. I think that making reserves without giving people other options means that you are going to have illegal tree felling and poaching, as it has happened before and still happens in Mexico. The objectives of long term conservation are

not fulfilled because, as I told you before, more tree felling occurs because people are afraid that the government is going to take their lands away, and its their land. They also seem to have forgotten that Mexican revolution ever happened, the motto was “the land belongs to the one that works in it”. People wanted to own the land, it was the popular claim, a fight that claimed the lives of a million people in this country. So, I believe that it is very important, if you want to make a long term conservation plan, to give people more options of survival. I think that is the whole idea in the back of this project. To do something that allows people to decide to invest more in the protection of their environment and that allows them to live better, so the option is to give them options, but it has to come from below. It is no good if someone arrives with the attitude of know-it-all or feeling superior to tell them what to do, if people don't get engaged with the project they are going to abandon it, as it has happened many times before. You can see the henhouses that were built I don't know when by some president. They decided to make small fairs in Walt Disney land. The biggest egg and chicken producers in Mexico, El Calvario y Bachoco are in the region of Tehuacán, the most important farms. And the government decides that as a possibility of development to these villages was to give them henhouses to produce chicken and eggs. But how could they compete with those big enterprises that even have foreign capital? Well the project died and there are the abandoned henhouses.

(Interruption)

This country is full with proposals from above that people decide not to follow, either because they were not successful or because people didn't see their relevance and therefore decided not to follow them. But I believe that if the project comes from down, with the people, you can talk to them to see what they want to do and suggest things and then offer your help in some way and then they tell you “no, what we need is your help in that area or the other” , then people really gets organized and does things. When I told them, I'm going to go with the people of Red Margin, to see if they want to help us they even killed a goat for us. How do I explain this? People do community work, the *tequio* (an indigenous community work system) works, it is not only of Oaxaca, it is also from Puebla. So there is *tequio*, to clean the roads and many other things, like killing a goat if important visitors, that potentially are going to help them are coming to visit the community. So someone went for the Maguey nectar to make pulque, another one killed two goats, someone else made food, a stew, then everyone got involved. So the community gave an amazing welcome to the people of Red Margin and they were very moved by it.

AL: Sure.

AV: And well it is like this right? When there is a social bond that penetrates between people then the project is going to be successful without any doubt, and it was like that with this project. I think what they need to do know is to invest their money. I told you that Mariana (a student) wants to start to help them with this. I told them “ in this country in which the government is exploiting us with so many taxes, the interest rates are almost nothing, very high for some things and very low for others. Money has to be invested”. So I think that is what is missing there now, to know how to invest to allow these projects to grow to improve everything.

AL: So after four years of its opening how it is organized? Who is in charge of the museum? Who is in charge of the finances? Who is in charge of the management?

AV: There is a committee of around ten people that is voted in the assembly, I'm not completely sure how but I'd dare to assume it is by assembly because everything gets decided in the assembly. They don't make a decision without first asking everybody

because if they do they could have many problems. And people generally want to avoid problems. So a committee is appointed, and I think the charge is for two years and then a new one enters, they get organized and work and then when their term ends another one enters. In the same way as all the other communal authorities, every two years more or less they change. Ten people are in the committee and it can be anyone.

AL: So they are in charge of everything concerning the museum, maintenance, management, cleaning?

AV: Everything. Also the guides, they have to see who is available, and if they have to clean a path of the guided tours they call the community to collaborate, everything is with the *tequio* system, everything.

AL: So tell me about the guided tours. Whose idea was it?

AV: Well look, many of us spend long seasons here, especially while making thesis research. Juan Pablo, the guy that just knocked on the door was studying cactus seed dispersion in this site. His PhD thesis. So he, that was here for long periods of time, started to give talks, because people wanted to know more, they asked us to give them talks. Then the time I spent there with Juan Pablo doing his research, I think I was there for fifteen days and almost every evening I'd go and give them a talk. Sometimes we took the projector and the computer and we projected over a white sheet somewhere and we explain some subjects to them. The talk depended on how much time you had to prepare it. Javier Medina, who is doing his PhD research in the UK but has field work in San Juan Raya lived almost three months there and he was very well known and gave many talks. And in those talks people from all sorts come, from elderly to children, many women, all very groomed. And normally the person giving a talk is very dirty, because sometimes we've been working all day in the field and didn't shower.

AL: (Laughter)

AV: And so that is how it happened. Many people wanted to know more because they wanted to be guides. Although now many say little lies and others tell stuff that is not true and I tell them "hey, what you're saying is not true!" "Really is not true?" they say. So things like that happen, but not often. And well more or less now they know about rocks, plants, they tell you many things and they know the paths very well. There are guides that are better than others, some are leaders. Primitivo Reyes is a leader, a great guy. All his family. There is people that are, that have good ideas, that become involved. Juventino is the other one, the one that found the dinosaur tracks. Some don't get involved very much because there has been frictions or something like that, I don't know exactly. But, in spite of everything this is a viable project that works, where people are very much involved. When you arrive people come out of their houses to sell handicrafts so you can see that there is activity and that people are putting energy into it.

AL: And the community that lives there is part of some ethnic group?

AV: They are descendant of Popolocas

AL: And do they still speak the language?

AV: No, not anymore. No, but until recently there were two old men that spoke popoloca, but now no one speaks it anymore.

AL: And do they have certain traditions that are specific of their group or they are more mestizo now?

AV: They are more mestizo now. But still this is a group with many indigenous traces, although mixing of races and groups is very extended. There are many communities close by that are Popoloca still, Los Reyes Menzontla, a town with a pottery tradition, they make amazing things, the most beautiful pottery I have ever seen, they do not use chemicals, everything is hand made without any moulds so they make the figures with their hands. The technique has more than 2500 years old and it is intact. Archaeological studies have found that the technique has remained the same. Very beautiful. The picture in the vegetation guide where someone is burning something is from that community. They do not have pottery oven, everything is open air, they use up to seventy different species of plants with different calorimetric properties. It is impressive. It is a Popolocan tradition.

AL: Do you think that this initiative of the community museum is also helping, not Only in terms of tourism, life conditions and conservation of the environment, but in the sense of cultural heritage, social dynamics and conservation of culture?

AV: I don't know, I have no knowledge in that sense. It would be interesting to see if people have reaffirmed their origins. I guess so because when you see the gallery of, well you are going to see it, it is really small, but when you see the gallery of human settlements, origins of maize and ethnic groups you see one of the first tiles that were made in this town. I have never seen those kinds of tiles before. People have to find ways to speak about their history. And I think that can make you reaffirm yourself or not. But I think that to see if that's true you have to measure it with a more social technique, I have no knowledge in that field, I wouldn't dare to suggest something. But I believe this has had many impacts. Not only the generation of environmental culture that well is there now, when they are giving you a tour they are lecturing you about their environment. They explain the plants, and before that didn't happen, before that they did not have a broad idea about this, maybe in the case of birds they could tell you the common name, but now they can talk to you about a lot of things. This has generated a social transformation in terms of culture that probably touches part of their origins, their roots. I do not know about this because I was never in touch with that side but I think is something that can be looked into. My impression is that women are more active in that side and generally women do not speak much with us foreign men, unless their family is present, the husband or someone. They talk more among women. So maybe you are going to have an advantage there. My impression is that women are more involved and devote more energy to this projects, although men also, but women are always planning and plotting stuff.

AL: And are women involved in the museum? Do women participate in the assembly?

AV: Yes, everyone is there, the whole community.

AL: Are there any female guides?

AV: Yes. Everyone can be a guide. You are going to meet Soco, that works with us. She is something else, she is very enthusiastic. Our right hand. I hired her to collect seeds and also she tells us when the rainy season started. Because sometimes we are here but with one foot outside ready to go there when it starts raining. Things like that. Well and you can see that she's super enthusiastic, active and intelligent.

AL: Are you or someone else from outside the community still involved in the museum? Or is it just them now?

AV: In general they do everything by themselves in the museum. We are always in touch in case they want to ask me something or something like that. Now, after we did the museum the CONANP (Protected Natural Areas Commission) proposed them to make another one. Our reaction was "What for?" But people from the community did accept, because the current museum is in the police station, where the authority is. But they did a huge white elephant. You are going to see it. They did a very big construction, I would dare to say it's even megalomaniac. The problem with making something that big is that you have to fill it and make a museography that has a discourse, a conducting line in the discourse and well the problem with very big things is that you need more funding to fill it and to make it look well. To avoid it looking abandoned. The advantage of this very humble museum is that consists only of two little rooms and the paths where people walk. But that is enough to get people interested in going. Then well now they have built a white elephant and people in the community are calling me again to help them, they asked me if people in Red Margin were willing to help them again. I went with them and they agreed as long as there's funding. So now we are doing this, people at Red Margin are waiting for me to send them the script. Now we have more elements, I proposed that we should now not only talk about the Cretaceous, when there was the sea, since they also have dinosaur tracks we could go back in time and talk about the dinosaur area and then talk about the sea. To see the historical endeavours from the dinosaurs until the last thousands of years that we already know how they were, we have studied the paleoclimate of the region and we know that there were great changes of glacial influence. The last glacial, Wisconsinian, had very cold effects in the valley, particularly this area, there where pine tree forests and things like that here. Then the idea was to reconstruct the story from the age of the dinosaurs up until our days and talk about many things. So this is going to be our discourse and well we are in that now. People of Red Margin said yes and I told Mariana to see if Popular Cultures (PACMYC), in order to see if we could submit our proposal again, now they give 50 thousand pesos, that is something and we have to look for other funding as well. What I want to tell you with this is that we are always in touch with the people from the community, when they have questions or doubts they call me or someone in my team. Sometimes they tell us they have an idea and that they want to discuss it with us. So we have a good communication with them. Although at the beginning it was mostly us that created the museum and they were working with us now is theirs and they are managing it without us. They are completely autonomous and it is working.

AL: So, would you say them that this museum, well this initiative of community museums, if you could put it in a few words, what would you say it is its value? Why do you think these initiatives work and do you think the model could be copied elsewhere? Do you believe that it is working here due to certain characteristics that could work elsewhere, with other people?

AV: Look, yes, I believe that it has tremendous goodness, first of all, it is a project that is built from the bottom up, it was created with the participation of common citizens and it generates knowledge, it generates a very positive cultural change and the objective of conserving the environment is being achieved. At least it works for this very small but very diverse region. You are going to see it, it is impressively diverse. Then it generates social participation, that is not easily achieved in this country, especially because all the programs have a top down approach. Then when programs end, when money stops flowing, everything ends, people stops doing things. This could have been the destiny of this museum, to be abandoned by the people. But people here have seen an opportunity in getting involved with the project and I believe that the objective of the conservation of the environment has been achieved. I think this program has enormous, enormous goodness. It generates economic resources to improve the life of the people, and we are talking about very poor people. Then, let's say, it has been very positive, it has promoted community

organization, even more, because they were very organized from the start. People that live in communal properties are very organized, very democratic, then... (phone rings) Excuse me...

(interruption, phone call)

AV: I don't know who she was.

AL: (laughter)

AV: So, what was I saying? Well, I think it has had a very good impact, I think somehow we have to measure it. To see how good it has been. My opinion is that it has had a good impact, the conservation issue, the involvement of the people, the promotion of organization, the women's NGOs, the civil association, the fact that people, women especially are proactive in getting funds. This is a town where people don't go out much, outside of the area, they are a very closed community and to see that a group of women from here are in the offices in Puebla, the capital of the state, receiving their money, to me that is a very impressive thing that I had never seen in this town and let me tell you I have been working here for a very long time, although I'm more involved now than ever, I had never been as involved with the people as now. But with the museum I'm not deeply involved, that is their story. But, going back to the question, the community museum, well maybe not all of them can work, I think it depends on the subject they have. I think there has to be a sort of magnet to attract people, that people say "let's go there because it is cool" I think that if you can find that attribute that makes it interesting then it is surely going to be successful and its going to have an economic impact and other benefits and advantages. In terms of conservation well I think it does work. My balance is that museums work and that have many advantages.

AL: Ok, I believe that's it. Thank you

AV: Thank you.

Interviewee	Place	Date
MSc Carlos Silva	México D.F.	8th December 2010

AL: Good morning Carlos, so could you to tell me a bit about your work in the community and the museum? How have you been involved?

CS: Well, I have been working with Dr. Valiente for many years and I have helped him in many moments doing fieldwork, part of it has been also my own work for my research. That is how I started to work and to know the people in San Juan Raya.

AL: You did your bachelor degree here in this lab?

CS: No, I did my bachelor with Ezequiel Excurra, not in this lab. It was actually the lab from across the hall. I think Dr. Valiente was not working here when I was doing it, he was just finishing his PhD. So I finished and after I started to work with him in my master's degree. My master's degree fieldwork was in Baja California, but we have always been a very united group and we have always helped each other, so many of my colleagues were working in the valley of Tehuacán and I was going with them to help. That's how I knew San Juan Raya, Zapotitlán, and other places of the area. After my masters, for my PhD I started to work in the valley of Tehuacán so I kept involved in the area. But I tell you, we have always been a close group and we help each other in the fieldwork. Small details, a bit like we did with you when you needed to go to San Juan Raya, we all went there. If one colleague needs hands to collect fruits or seeds, we go all and help to set up the experiment or whatever. So that's how I started to get to know the people from there. And in terms of the museum and the people of San Juan Raya, and well in general the people of the valley of Tehuacán, Dr. Valiente has always had the idea of working with them. It is a bit of diplomacy; you have to arrive first and talk to the people and win them over, because at the end they're the ones that can help us, that can give us permission to work their lands, so they can either facilitate things for us or to hamper the process. So Valiente has always had the idea of working with the people. So, according to what I remember the museum was not originally a government initiative, the idea was of Dr. Valiente and the community. And everything started very rudimentary. The idea was that the people could have certain profit, both in terms of development and of money. And well little by little they started to get organized, to move, to ask for funding and they started to have money. And if you move to get money sometimes you get it (laughter). Well if your project is well presented and praiseworthy. So that's how the project of the museum started, in a very small scale, at the beginning the museum was in the police station.

AL: So at the beginning it was the idea of the people and Dr. Valiente?

M: Yes. Obviously after, the government as usual, and well I don't think it is wrong but I think he way they did it was wrong. They started to give them more money and well all these things with CONAPO and people from the reserve started. They always try to, well they have to report their activities every year and submit reports and so well they want to include every project and to claim it their own. So they started to give money and as if their project was their own from the beginning and they started to claim it was their project and not the idea of the people. But well, we didn't care about that, what was important for us was to have planted the seed of a good relationship with the people. After that the CONANP planned this new museum, without much idea, you have seen it and for me it is an excessive expense of resources, because it is a museum that in terms of space exceeds the collections. Why did they build so many galleries if they don't have so much to show? I mean they have a lot of fossils, but a lot of them are from the same species. So they

should have had more support in terms of museology advice. I tried to go and advice them, I mean I'm not a paleontologist, but I went there to tell them which fossils were molluscs, echinoderms, etc. I took a very big book with me to try to help them. But the people from the reserve didn't help them with that.

AL: So they just gave them the money?

CS: Yes, they only gave them the money.

AL: And so this time they left the community to build and design their own museum?

CS: Yes, I think so. But I think they didn't do things right, they just put the money, like the government is always doing. They gave the money and leave them to organize themselves. The only purpose for them is to have some project more or less working with which they can justify their programs. So it is not a bad thing that they are giving the money, of course that is super good, they have to do it, but they should do well planned projects. Well this is the history of Mexico, by the way. So that is how the museum moved to its new building, and we continue to support them, I just went, as an initiative of Dr. Valiente, "I know it is not part of your job but help us with that" he said to me, to help them to arrange the fossils in a better way, so that they don't look cluttered. At the end they didn't listen so much to my opinion, but anyway (laughter). So that is how the second part of the museum is now.

AL: Referring to the first museum, in terms of making the museographic script the community did not participate much right?

CS: Yes, exactly, I forgot to say that. That was the work of Dr. Valiente entirely. He contacted from the beginning some professionals, a company called Red Margin, to do the museographic script. And they helped to plan and carry out the design of the first small museum, they did the panels, to print them, the script, the design, everything, all the things they know how to do, they practically did all of that. We did the scripts, with help of other people. But the panels and the design were done by professionals. It was not a massive work, but also it is worth highlighting that they did it for free. It was like a social service to the community.

AL: And what do you think of the fact that the community took all the decisions in this new museum, I mean in terms of museography and content of the galleries?

CS: Well I think is not bad because its their museum, however the people of San Juan Raya do not have the knowledge of how to design an exhibition the best way or the scientific knowledge to be able to make a paleontological exhibition in a correct way. Look the mural they put there has no scientific accuracy. But as I said before it is their museum and they should be the ones in charge. The problem here is that the people that gave them the funding put lots of pressure on them to open the museum as soon as possible, so the people of the community rushed things and did not have time to consult experts to develop the exhibition. That is why is full of mistakes.

AL: And when you collaborated with the people of San Juan Raya in the creation of the first museum how did the communication process happen?

CS: Well we have always worked very well with the community. Since the beginning, when we arrived to carry on the first studies in their lands, we have always had good communication. I think they noticed straight away that we were not like government officials, we come here not to take advantage of them, we don't come here with any other interest than to help them and that they give us permission in making research in their

lands. So they trusted us when we were taking the decisions of the museum. We made the museographic script and we came to tell them, to inform them of our plans and they liked them so it worked well for both. And as I told you before, the community is very happy to help and be involved and they do take this museum as their own, but in terms of knowledge they do not possess enough to make a museum exhibit. I mean, a scientifically correct museum exhibit.

AL: OK so, you knew the community before there was a museum, do you see any changes?

CS: Yes, incredible! (laughter) I've been going there since I was doing my bachelor degree, because in the course of Paleontology they used to take us there. So around 1986 it was the first time I visited San Juan Raya. You could hardly call it a town then. There were a few shacks made of wood, and the people were poor, very, very poor. They were even exchanging fossils for food, you gave them an orange and they gave you a fossil. Food, they were not exchanging for money, they wanted fruit or whatever you had with you. The situation was extremely bad. And little by little things were getting better. I don't know at the beginning what made them start the improvement, maybe they had some support from the government, because things improved a bit, although not much. And little by little they were organizing themselves, not only with the museum but with other initiatives, they are people that fight hard and have been able to get organized and improve. So I believe that the museum was a turning point in that sense, well I have to clarify that I'm talking about the museum and the touristic walks that they are giving as well, the whole of ecotourism activities, because well the town has improved a lot in economic terms since they started to have more tourists visiting them. So yes, it is amazing, it has changed a lot. They have other problems now, but I think they don't have to do with the museum, for example, the paving of the roads, they have tried many times to get it and it is still a dirt road. But I think those are power struggles with Zapotitlán. But in economic and developmental terms, the town has improved, they have the permit to asphalt the road, but there is a struggle with other towns. The museum and the ecotourism activities that they have now have made them more suitable to have more permits and funding. If they didn't have these disputes with other towns they would have paved roads now and the development of the town would be easier to see.

AL: And what is this dispute about?

CS: Well from what I know it is because it is a road used by many communities and well that in fact connects some communities and then leads to the highway. However, some villages are not interested in cooperating in the paving of the road because they have no interest or maybe because they have no money. San Juan Raya has the interest of the visits of tourists, but other villages don't have this so there is no need for them to pave the road. So the community of San Juan Raya does not agree in making all the work themselves because it will benefit everyone so they say every village has to cooperate.

AL: Ah ok. An in San Juan Raya or in nearby communities have you seen that the museum has helped to generate other projects? That, since they had the museum they have organized themselves to create other projects?

CS: Well I don't know. I know that they get organized for other things. I recently found out that they wanted to develop more the handicraft business and they also want to promote their traditions. So they want to promote the town more now that they have more outreach with their museum. You know the museum is advertised in some flyers from the reserve. For example in the botanical garden of Zapotitlán I got one of these flyers where the museum and the ecotourism walks are announced. So they have been promoting their museum in the region.

AL: In your opinion, how do you see the value of the museum in terms of conservation of the environment and the cultural patrimony?

CS: I think that what is valuable about this project is to see how people have got organized to have a profit of what is theirs and simultaneously to take care of it. I think that the fact that the museum is there is making them conserve can be misinterpreted and I think that the idea is the other way around and it all started the other way around. They have always wanted to conserve what they have and they don't have much. So they took advantage of the ideas of other people and so the museum in that respect has had a very good influence. They have been starting to protect their lands, they have the job of guards or policemen and they can report people that are stealing plants or fossils. It is important also because they have been starting to understand that it is not only about the fossils. Fossils have been always getting the attention, because they are fragments of living beings that are not even terrestrial, they are all aquatic, so they claim a lot of attention. But now, they have seen that all that surrounds them is part of their richness and that they can make use of it and that people in other places value these things very much. They have been witnesses to a certain extent of the looting of cacti; they saw how big trailers came and stole large amounts of cactus from their lands. Maybe they wanted them to plant in luxury hotels or in rich people's houses. So, they have seen this and they started to protect their lands. And that was partly what unchained the development of the museum and of the concept of conservation that all the people in the community have now.

AL: And what is your opinion of the state of these initiatives of community development in Mexico?

CS: Well in the towns that I know from around this area I think they are quite good, but still I think there is some consultancy needed. What happens is the same as in San Juan Raya and in Santa Ana, Santa Ana has another museum that I don't know if you visited.

AL: Yes I have.

CS: And so it is going and people organize themselves and have motivation and spirits to show what they have, their history, their richness, in natural and other terms, even if it's not much. The intentions are good and they have even been supported by the government or the reserve, but what surprises me is that they haven't had the support of professionals in terms of knowledge. So in San Juan Raya we have supported them in terms of Paleontology, but we are not experts on this field, we do another types of research, and that is wrong. For example in Santa Ana they show some anthropological objects, some masks, some photos, they found a cave where there were some pre-Hispanic masks and they have the photos of it. By the way they were left very angry because the masks were taken away from the community, probably to put inside a museum in Mexico City. And I'm not saying that it is wrong that the masks are taken to museums to conserve, but at least you could leave some replicas and explain them why the original has to be kept under some conditions to be conserved in a museum. I think that people in this community are still being treated like idiots "So you don't know what you have in the community so why should I explain you? Why should I take my time to tell you what you have if you don't know?" this kind of mentality. So I think that in those terms we are still very wrong. Maybe they give them some money to start a small museum or to make an ecotourism activity, but we are far from having things well planned and carried out as they should be. So I still think we have a long way to go. And you know that would be also good for some professionals, to have some experience and it could be a source of jobs, even if they are not in fixed term contracts and work only in projects. They could go to help the community to

start their museums, like in San Juan Raya and Santa Ana, with the knowledge they have of the area, with what they have studied, in a more rigorous way, more robust.

AL: Like what you did when you carried out some workshops in San Juan Raya ?

CS: Yes, but we come up with the same issues, it was the initiative of one group of work, one lab, not the government, which at the end are the ones that supposed to do it. The initiative of people like Alfonso Valiente or us, that want to support them, is because they have asked us to. And the talks we have given in the community have been about our work, because it is what we know about, but that is not what they are showing to the people. And I'm speaking about the fossils, mainly.

AL: Yes, I see. But there has been a process of communication between you the experts and them?

CS: Yes, especially in the subject of ecology, ecology of arid zones and for example the distribution of some plants and some animals, we have talked to people about the bats and the importance they have for the dispersion of seeds and pollination of cacti. We have been talking about these issues with them.

AL: And who was the idea of the workshops? Did it come from you?

CS: Yes, but well the people were asking us what we were doing there. People always ask us. When we arrive to communities we always ask permission to the people and then the government. And if the government doesn't give us permission we don't give a damn (laughter). Really. But we have to ask permission to them, because it is their lands. And after, if they give us the permission to work there, people from the community always ask us, what are you doing here? What for? They have doubts and are also curious to know what we're doing so sometimes we tell them that when we finish the job and we have some results we can explain them what we do and what findings we have. So this is the dynamics, it is very informal, in the sense that we organize it like you organize a party "how about we meet and we give you a talk" Like that, to that level.

AL: And people normally attend?

CS: Yes, they do attend and they like to learn what we're doing.

AL: Do you think that this museum is working, apart from being a factor in the conservation of the environment and their patrimony, as an initiative of informal science education?

CS: Yes, yes. Sadly it has also many mistakes. If we go to the rigorous side of the science education there are many things we have to change. And that is why I was telling you, they need some support, not only in terms of money, but a professional consultancy. For example, talking about the display cases, they knew they had to make some display cases, but no one told them how to do them. So after they were finished, I think they made the design, or maybe the people from CONANP, I don't know, and well at the end, you have seen the display cases, they look like from a cake shop. They are not well designed to contain fossils; it took us a lot of efforts to display them well. Did you see the cases have some covering in fabric?

AL: Yes.

CS: Well they put the fabric because the fossils were sliding in the cases. They had certain inclination and they were made out of glass so anything you put on top was sliding down. And for example the original cases that were in the first museum worked perfectly, but then again they were designed by a team of professionals that knew what they were doing and how to do it. So well in this case, for the second museum, they just gave them the money and no help of support. They left them alone. So I think that that is a problem.

AL: And even if the new museum has many scientific mistakes, talking about visitors and community members, do you think that this initiative is working in a certain manner as an effort of conservation or environmental awareness?

CS: Yes, I think so. But I think it could be a lot better. I mean it is working, people, the visitors that I have seen; I think they learn, something, not to a deeper level because the information given here is basic. But I would say that the ones that have more knowledge are the guides, they know a lot of stuff, and what I like is that they have been able to complement what they know from their traditional original knowledge with the scientific facts. They do get some of the facts wrong sometimes, remember the guide was telling us that you can calculate the age of the cactus counting each row of spines? And well that information is not entirely correct. But well I think this kind of things can be corrected, but what is interesting is that they complement this information with their knowledge and with what they are. Like the use of plants, which ones they eat and other things that they are telling you while you walk the paths with them. So that is very valuable. Also because it helps them to raise awareness, especially among the young ones, the new generations, that they have much richness that exists only in their lands, so that makes it super valuable.

AL: Ok. Well I think that's it. Thank you.

CS: Great. You're welcome.

Interviewee	Place	Date
Lugui Sotibrán	México D.F.	13 th November 2010

AL: Hello Lugui, could you tell me your profession?

LS: I am a biologist, I did my bachelor degree thesis here in the research group of Dr. Valiente and now I am doing my masters degree, here in this lab also.

AL: Ok, and how about your work with the community, how is it that you got involved in working with them?

LS: Well actually when the project of the museum started I was working as a laboratory technician with Dr. Valiente and he told me that the people of San Juan Raya wanted to make a museum and that they needed our help to look for funding. So I was in charge of making the paperwork to apply for funding. So this is how I got involved. I know the people of San Juan Raya were interested in making the museum and they asked Dr. Valiente for support on the project. So I made several trips to San Juan Raya for the papers we needed and I submitted them to the funding body. And when we got the support I also went to meeting with the people of "Margen Rojo", the group that made the museography to convince them to help us and work for free. With the money that we got we made the panels, the cases for the pieces, the painting of the walls, all the necessary items to transform the room into the gallery.

AL: So you say the idea of making the museum was coming from the people?

LS: Mm I don't remember if it was from Dr Valiente or the community or both. I think they needed something to be able to use their fossils for their benefit in a legal way and Dr. Valiente thought about the museum.

AL: And were you involved in the writing and development of the museographic script?

LS: Yes I wrote the panels that talk about the fossilisation process and the one that illustrates how San Juan Raya was millions of years ago. But really the person that did the museographic script was Dr. Valiente.

AL: So people of San Juan Raya did not participate in the script?

LS: No, no. That was our job. Dr Valiente told us the subjects we had to research to write the panels. And we were working closely with the people of Margen Rojo, we would send them information for the panels and they would tell us if it was ok or not.

AL: So the local knowledge of the people of the community was not taken into account?

LS: Regarding the information on the panels and the subjects that the museum was going to cover, no the community did not take part. We decided without them.

AL: And what did the community say about this, they agreed?

LS: Yes they did, well at the end they don't have the scientific knowledge to make the panels and the explanations. So it was our job. We did consult them on certain aspects.

Asking their opinion about how we had designed the gallery. However, the information was only our job.

AL: Did you know San Juan Raya before there was a museum?

LS: Well, before I never worked in the community, I knew it because as technician of the laboratory I often went with other students and researchers of the lab to help them with their work. I did not have much contact with people before. But yes, I know the community from my trips as a technician.

AL: And have you seen any change in the way of life of the community members since they have a museum?

LS: Well, I have always seen them as very organized. I think they have a strong sense of community. I remember one day we passed and the whole community, men and women and children were outside helping to improve the road that leads to their community. Now that I have more contact with the community I see that they get organized very well to do stuff that will bring benefit to the whole community, and the museum is the best example of that. I think the museum has improved their way of life. I could not tell you exactly by how much their economy has improved, but the difference is notorious. Also, people are willing to do stuff, they have a very good disposition to try new projects, to improve their living conditions.

AL: Can you tell me if since the creation of the museum have you seen that other projects have been born from the community?

LS: Yes. Well I know that some women of the community have a group to make natural medicines. I know there is a biologist from outside that is helping them. They go to the fields and collect seeds, they make them germinate and grow their plants and from there they extract plant essences to use them like medicines and beauty products. That is the only project I know apart from the museum.

AL: So you worked in the development of the content of the galleries and did you go to the opening of the museum?

LS: Yes.

AL: And tell me how was it?

LS: Well the whole community was present, the people of Margen Rojo and us from the lab. We cut the ribbon to declare it open. Someone of the community did, don't remember who. And then there was a party. Many people in the community helped to prepare lots of food, they even killed a goat for the occasion. It was a very big party and everyone was very happy.

AL: And well from your experience and in your opinion how do you see that the museum is working?

LS: Well I think that the community has always been very organized in taking good care of their museum. Although now with the move of the museum to the new building I think that they did not do very well. They did not organize the move and the set up very well. They always had lots of pressure from the people working in the Reserve. They wanted to show off the new museum and they put lots of pressure for them to open, even when the museum was not finished. I do not like the way the murals are done. The idea was to

follow the same design that the other museum had and they did not follow it. There is a lack of texts explaining what specimens there are. There is a lack of information for the visitor. They need to find a fossil expert to tell them which specimens, in specific, they have there. I think the museum could improve a lot, but the community seem to be content with what they have and do not want to make it better.

AL: In your opinion, do you think this museum is working to improve the scientific knowledge of the people of the community and the communities around it?

LS: Well I think yes, but I also think that they need to expand the subject of their museum, not talk only about Palaeontology, but to talk also about the place in which they inhabit, the environment, the ecosystem, the plants, the animals. From the research findings that have been drawn from investigations in the area they could extract what they understand and explain it in their museum to the visitors. A little like a "site museum". Palaeontology could remain as the main subject but I think they have to cover other subjects and aspects relevant to the communities.

AL: And do you think it is a good initiative to raise environmental awareness both in the visitors and in the community members?

LS: Yes I think this museum is a tool that allows them to take care of their natural and cultural patrimony. I think that since a young age, the kids of the community are participating with the museum, by actively working there as guides. The guides assume that they are part of the community, that they have to take care of it, that their community is unique. It is a source of jobs as well. I know many kids want to work as guides, because they want to earn their money or they need to work to help their families. I know many kids in the school want to be biologists as well, which tells you that the environment is very important for them, or is gaining importance. And well as I told you before I think they could put more information in their museum, cover more subjects like the conservation of the environment. That would help to raise awareness.

AL: What is your opinion of this type of initiative in Mexico?

LS: I think that sadly there are not enough funds from the government or private sector to support this kind of initiative. The government helped us with 30, 000 pesos, that is nothing, not enough to make a museum. You could see what we did with that money, and everyone worked for free. So I think if the government is going to support this kind of initiatives they should offer more funding. Also I think that the government gets involved in these type of projects without a real compromise to improve the community, I think they do it because they want to show that they do something for the people, without really having the wellbeing of the community in mind.

AL: And you see that people from the reserve have acted this way?

LS: Well yes I think they gave them funding to construct the new museum and they wanted to make it very big; I think they sent their architects to design the museum. I don't think they took the opinion of the community into account. Now they have a museum that is too big for the collection. There are two empty galleries. The authorities wanted it big to be able to brag about their work helping the community. They also put lots of pressure on the community to open the museum at a time that was convenient for them, even though the museum was not finished yet they had to open.

AL: In your opinion, what is the value or the importance of this museum?

LS: Well I think it is always good to arrive somewhere and see some information about the place. It is a good way to raise awareness of what we have and that if we don't take care of it, it will be lost. It is also a way to show the richness of the place. People don't imagine that in a place so arid and apparently deserted of life we can find so much biodiversity. Also not many people know or can imagine that this desert place is full with marine fossils of millions of years ago. So I think this museum helps people to know the history and the present of the community and its environment. And another importance is that the people that run the museum are from the community itself, I think that is much better than if someone from outside came and built a museum. Since they run the museum, they also recognize and learn of the richness and importance of their lands.

AL: Why is it important for this laboratory to get involved with the community in a project like this?

LS: Well certainly what motivated us what the fact that we are carrying out research in their lands. They let us work in their lands and so we had the desire to help and to support them. We did not want to just arrive to their lands and carry out our research without any interaction; we wanted to interact with them, to know about their situation. Our desire to help them to exploit their resources in a sustainable way comes from the idea that they are going to be the ones that take better care of their environment. I think a researcher that goes to the field to study should never be a stranger to the community where he is working. It is important always to be involved, to ask for permission to work and to pay back in any way the help that the community gives you. We have the idea that we have to share them our findings in the research that we carry out in their lands, so they have scientific knowledge to complement the one they have traditionally. Even in natural reserves there are always people living there and it is impossible to no interact with them.

AL: Well I think that is it. Thank you.

LS: You're welcome.

Interviewee	Place	Date
Suguey Martinez	San Juan Raya	5th December 2010

AL: Good night Suguey. I would like you to tell me about your work in the community. How long have you been here?

SM: I have been here only three months, very little time. So maybe I don't have all the information, but I think you can learn something new everyday. And as you go along speaking to people and you live in this place you learn a lot of stuff. The advantage I have in comparison with other teachers that have been teaching here is that I do live in the community. I decided I preferred to live here because this allows me to do my job in a better way. I know my pupils and also it is a beautiful and calm place so for me it's nice.

AL: So the other teachers commuted everyday from other places?

SM: Yes, for the past three or four years, teachers that come to work to this community have decided not to live here. So they have less contact with the community.

AL: And you have been a teacher for a long time in other communities, right?

SM: Yes, I have seven years of experience, I have seven years working as a teacher.

AL: And so in this community how do you see, well the first thing I want to ask you about is the participation of your students, or of the community in general, with the biologists or palaeontologists or other scientists that come to give workshops or information or advices here?

SM: Well I feel that it is very good. All the kids and adults receive with delight the visit of the biologists and other scientists. They receive them with enthusiasm because they know that they bring good things for them, because they know that all that they come to offer are proposals for their development. So they have the support and are very welcome here. Lots of my students want to be biologists. Really!

AL: Have you been to any of those talks or workshops? Or have you heard how they are?

SM: No because all the talks that they give about ecotourism, traditional medicines, biology, handicrafts, and all that are in the morning, at nine or ten, just when I'm in classes with the kids. So I haven't been able to attend. Well, what I know is only about the work of the biologist, which is the only person which whom I've been able to talk about this. She comes and gives workshops on how to prepare shampoos, syrups, soaps, creams as well I think. From 2pm to 8pm. She explained them all the procedures, she was the one that created the brand of the products, everything. She was the integrative force.

AL: And it is an initiative that only involves women from the community?

SM: Yes, totally. Which is very good because it allows them to be contributors to the economy of the family. Also it fights against "machismo", which in rural Mexico is still very high.

AL: And talking about the kids, which is the subject that you know more of, how do you see them in terms of knowledge of biology, palaeontology, their environment?

SM: Well let me tell you that they see all this issues as part of their lives. It is not like us that would see strange that biologists are in our town. For them is natural, like when in a family a new baby arrives and you learn it is your new baby brother. It is normal and natural of the place they live in. Palaeontology is a normal word for them, if you ask any other kid they would not be able to say it, and these kids know it perfectly. Because they are used to the word and they have grown with it. Since none of the women have someone that helps them taking care of the kids, they take them along to all the workshops, consultancies, talks, so all these words are familiar for them. The word biology is for them like for us would be a medical doctor, something normal. If you ask them: What are you going to study when you grow up? And instead of wanting to be a doctor they reply Biology or Palaeontology, for them is totally normal nothing odd about it. And they don't say it because it is a novelty; they say it because they are submerged in their environment and their environment includes that.

AL: Well, yes I just saw it in the classroom with the dinosaur subject. So you would say that these children have more knowledge on issues like Palaeontology and Biology than other ones?

SM: It is not only that they have more knowledge, which they do, but that well maybe kids in the city could have some knowledge on these subjects because of TV or films, but these kids know it because of the facts and they talk with you about fossils. The word fossil indicates you the terminology that these kids are used to. And I think that is an advantage for them. And I repeat, it is because it is part of their environment.

AL: And do you think they understand the concept of fossil? Do you think they know what they are?

SM: Yes because they have seen them, they have gone to the touristic walks and the museum. Also their parents and other family members are guides in the museum well they transmit their knowledge to them. And if you ask them they can explain you what a fossil is, they know it is something that was left and fossilized throughout years and that has been found now. What is for them the conservation of the environment? Well, don't steal fossils, don't throw rubbish and don't cut the plants. They never mention the air pollution or stuff like that because it is not part of their environment. They only talk about what's in their environment. And well compared to them the kids in Mexico City would talk to you about smog, rubbish and water, but not these ones. They all know that you should not steal fossils and cacti. That is conservation of the environment for them.

AL: And so in your personal experience as a teacher for many years in many communities, what do you think the value of the museum and these initiatives are in the community?

SM: As I told you in the classroom, it is the rescue of. Why is the museum important? Well to know that the dinosaurs existed, that the place where you inhabit has many remains of the past, that you are part of something important and that it is not isolated. Not because this is a community marginalized by lack of resources, by the way this community is registered in INEGI as a marginal community with lack of resources. But anyway, that is not a reason not to have a vision that we are part of this world, part of a world recognized reserve. They see it as locals, it is in their way to consider time and space, but us as outsiders we see them as submerged in a place that it is unique in the world. So it is very important because this is a very small community and they are in charge of transmitting this knowledge and well history is passed from generation to generation and not only in

books or not only by visiting the museum, they are the ones that transmit the knowledge of this community as well, you could say that they are the living museum. They know what is there and what not in the village and the environment and the museum, they can tell you everything. And they can transmit this knowledge also when they get out of the community so even if you don't have the opportunity of coming here and they tell you what is in their community you will get the chance to imagine and do some further research. So they are part of the museum.

AL: So you say that being part of the museum involves greatly the new generations of people because they are going to inherit all this. Do you think that it is important that since primary school the kids are taken in a formal way to the museum? Because in general terms they go in and out the museum whenever they like, but do you think it could be important to make planned visits and does the national curriculum lets you do that?

SM: Yes, well, right now we are going through a reform in the education system. It has been developing since the year 2000 and it is global, so Mexico is part of it. And this reform talks about abilities that you have to form in the kid to prepare him/her for life. So these start with the knowledge of him/herself, then the family, then the community. The locality, the state and so on and so forth. These growing stages of knowledge go also according to the grades in primary school through which the kid is passing. So you have to take the knowledge that they have in their community and adapt them to the curriculum. So, I can take visits of the museum, to the cactus, the fossils and other things as part of the subjects, because as part of the subjects they have to know their locality. So I teach them first about their locality, not about Mexico City, or Guanajuato, or the world, and as they advance in the years of primary school the level of complexity gets bigger as well. What is in your community that does not exist in others? Which advantages do you have compared to others, and which disadvantages as well? We work with comparisons. What does your community lack in and what does it have?, etc, etc. And after, when they are in 5th and 6th grade you teach them about Mexico and after about the world.

AL: And this program is currently in use?

SM: Yes, since 1997. So the program starts with knowledge of their locality and expands each year until you teach them about the world, with an increasing level of complexity as well. Like that you make them understand the place they occupy in the country and the world. And well we are very lucky here, because we have a museum that exhibits a very important aspect of the locality of San Juan Raya, so kids here do not have to travel to other places to learn about it. They have the museum at their doorstep. And you know, that is very important, because we are in a community with not easy road access with people that do not have enough money to send their kids in school trips. The school does not have a school bus so we 'd have to rent one if we wanted to go out and who is going to pay for that? I think that is another huge advantage of having the museum here.

AL: So you plan to take your kids to learn more about their community in their museum?

SM: Yes, I want to go with them.

AL: Have you seen in your experience as a teacher, other community's initiatives such as this one?

AM: Well I have worked in some communities that have local museums, mostly in terms of archaeological pieces that they have found. However I have never seen a community so committed to their museum, here they have tours for the tourists and is the same people

of the community that do them. They are in charge of their property so they are in charge of their heritage as well. Because this is a very poor and very deserted region they do not have many opportunities of having a good income, so I think the museum provides them that.

AL: Well I think that is all, thank you

SM: No problem, my pleasure.

Frontera Corozal

Community members

Interviewee	Place	Date
Sebastián Arcos	Frontera Corozal, Chiapas	25 th November 2009

AL: Good Morning Don Sebastián, how have you been?

SA: Ok Miss, thank God everything is just fine.

AL: So Don Sebastian, I would like you to tell me what is your occupation?

SA: Me? Well I am a farmer. I have a piece of land here in the community where I plant my crops and keep my animals. We mainly plant corn, beans, and other vegetables to eat, like tomatoes, courgettes.

AL: And you are an active community member here in Frontera Corozal?

SA: Yes I am. Since we moved from our old lands to here I have been a community member. The government gave us these lands and we divided them into members, which were represented by a family. So each family got a piece of land upon arrival. This is the land that I have now, where I have my crops and cows. And when I die my sons will have the land that I own now.

AL: And how is it that you started working in the museum?

SA: Like two years, I think two years now. But at the beginning I worked one year. In the beginning, when the museum started. I worked one year. But there were some co workers that made mistakes and then the community sacked us all. Only one made a mistake but we were all sacked. The assembly voted and we were replaced, that is how the assembly works. And well recently they appointed me again and now I have been here for two years.

AL: And what are your tasks as president of the museum?

SA: Well, in here, well now I am like the administrator. Because we don't have the money to pay someone to do the administrative work so the secretary and I do the administrative work and we do everything here. All the problems that we have here we deal with them, like when the computer is not working anymore or when the galleries' roofs are damaged, we reach an agreement on how it is going to be dealt with.

AL: And are you the person in charge of creating new programs or proposing new ideas for the museum?

SA: Well in a way yes. But there are no new programs, I only do the administration. All the everyday administration is dealt by the committee. All the propositions regarding the museum are dealt with the assembly. The big decisions about the museum, especially about the money.

AL: The earnings of the museum? How does the museum maintain itself?

SA: Well the earnings we have are for the community. These years, due to the lack of tourist affluence we don't have many earnings, but before it was not like that, and I don't know how next year is going to be, I don't know yet if we are going to have more income next year. Before we used to have more tourists coming here. So these years we have less money but we have been working well, although we don't have much income we are still going. Despite the lack of income we are doing all right. We are keeping the museum in good shape and the restaurant is still working well.

AL: So the museum sustains itself only from the restaurant because the entrance is free right?

SA: Yes, but it was not like that before. Before we used to have a ticket reception here at the entrance of the museum so people came here, wrote down their names and paid their ticket and then went inside to see the galleries and at the way out they ate and left. It was like that before, but now no, because when people that were not very good in the job started to take care of the museum the ticket office ended and now is free. Now I'm thinking of having the same system as before, but I don't know if I'll be able to do it. I'll need to ask the committee and who know what they'll say.

AL: How was it that the museum was founded? Did the town decide that as well in the member's assembly?

SA: When we started to build it?

AL: Yes. Well I would like to know more on how the idea of having a museum arose in the community? Who initiated the project?

SA: Well, before, there was a big stele, it was brought from Dos Caobas. Or well no, this was before, this was another one. Anyway, we found a Mayan stele in the lands of the community and we put it in the auditorium, and then the government came with a big van and took it and then we found another one, the one that is here now, and the assembly said in order to keep the stele we are going to build a museum and in there we're going to put everything and so we made the application to have a museum with Coneculta. To put together all the pieces we have, we are going to gather them and put them there. If not the government takes them. Those pieces that where behind those buildings were now taken to, I don't remember the name, another country.... England, they were taken to England. That's why the assembly said, we are going to make a museum where to put all the pieces, and that is how we started to build it.

AL: So the community decided.

SA: Yes, the community.

AL: Why was it important to keep the pieces here in the museum?

SA: Well, as I said before, because if we don't build the museum the government takes away our pieces and we felt they belong to us, because they are in our lands and they are valuable. They are Mayan pieces and our people descend from the Mayans that lived many, many years ago here, so they represent our culture. Is not fair that the government takes them. The museum also is very attractive to tourists, so it brings so many benefits.

AL: And what happened after? How did you finance the museum?

SA: Coneculta gave us the money to build the museum and the restaurant, but did not provide us with money for many things. Just to build it. After we had the agreement with the biologists from the UNAM and with the money they gave us we made the biodiversity gallery. The museum has always sustained itself with the earnings of the restaurant.

AL: Could you tell me how the museum was set up? Did you decide what to put in the galleries?

SA: So at the beginning we just collected pieces of the Mayan people that community members had found in their lands and put them in a gallery. They were not many, the main piece was the Mayan stele I told you about. After people from Coneculta came and presented their design to us. Also people from INAH came. Then some people came to design the gallery where the history of the community is represented. They were carrying out the project of what to put in the galleries, they made all the plans. I guess because they are the professionals. But at the end, before they took decisions they were asking us our opinion, because the museum is ours.

AL: How was it to work with the scientists or government officials on this project?

SA: Well I think it was ok. We had some communication, most of the time it went well. And they presented their projects to us to get approval. So the community did not participate in the decision of what to put inside the gallery or how to arrange it, but is normal because we are no professionals, we have no studies. Also, they were the ones giving us the money to build it.

AL: And do you feel that the museum does belong to the community? Does the community have certain activities in the museum? Do people from here visit?

SA: Yes, we do some activities here sometimes. The day after tomorrow we are going to have a meeting here with the president of the municipality. And the kids of the primary and secondary schools come sometimes to the museum, not much. But the rest of the community does not come. They are not interested, only people come here if they want to sell things to the tourists.

AL: Do you know roughly how many visitors you get per year?

SA: I don't know, we have no data, but we are calculating like a thousand visitors.

AL: Per year?

SA: Yes, based on the amount of money we make from the restaurant. We have a book at the entry where people can register, but people sometimes don't want to put their names and they go without doing it.

AL: And the project is working well? Is it sustainable?

SA: Yes it sustains itself, however there are many things going wrong. Like the botanical garden, it was damaged this year because it flooded. The water reached even here. That's why some plants died. And we haven't repaired it yet. And as I told you sometimes people have started to work here and are not qualified so the empty room we have here at the

offices was left unused and is now a storage room, but it is not supposed to be a storage room, it is for studying, for training, all of that.

AL: And, do you think it is a good thing that the authorities are changing every year? Or do you think is bad in some respects?

SA: Well it is bad, because when a new one enters they don't know what to do, they don't know what problems they have to face and when they are just starting to know the job well they change again. But when you are in the same job for two or three years then you know which problems there are.

AL: Of course, and do you like your job at the museum?

SA: Not really but if the assembly appoints me again I'll stay here.

AL: Can you decide that you don't want to do the job any more?

SA: Well, not really (laughter) it is a duty for community members to take on these jobs for the wellbeing of all of us in the community. Although I'm not charging any money I'm willing to do the job.

AL: As you have told me before, you have been involved with the museum since its creation, can you tell me if you have noticed any change in the community's daily life since you have a museum? If you can notice any difference in now and before when you didn't have the museum?

SA: Yes it is a bit different.

AL: Yes? How?

SA: Well first because since we have the museum we have a bigger flow of tourists, more people come to visit. And this means a bit more money for the community. Because we have more tourists now we also have people offering other services, like the little hotel, the boat rides. Also people can sell the handcrafts they do to tourists.

AL: So you think the museum is a good thing in economical terms?

SA: Yes, for me it is.

AL: And do you think that is important that you have a museum, that you keep having it?

SA: Yes it is important.

AL: And why?

SA: Because, well so that people here can look at it. To allow people to know the Chol traditions, because they don't know all that we have here. Also for children of the community, to allow them to see what the ancestors were doing, how they were living. And with the gallery of the jungle

AL: The biodiversity gallery?

SA: Yes, that helps us to show our environment to the people that come to visit.

AL: And why is the environment important to the community?

SA: Well because we live here. We feed ourselves from the things we plant and the animals we keep, but also we need to live in a clean place, that has no rubbish and that the river has clean water. And for tourism is better as well.

AL: And well finally want to ask your opinion on why do you think it is important to conserve our natural resources?

SA: It is important because when we don't have, mm I can't find the word... well, it is not good when we don't have many trees and all that, because we have more flooding and the soil gets used more. When we have the hills with forests everything and everyone is happy. That is why it is important to conserve.

AL: Ok well that is all. Thank you for your time.

SA: Yes. No problem.

Interviewee	Place	Date
Florencio Cruz Gómez	Frontera Corozal, Chiapas	23 November 2009

AL: Hello Florencio, how have you been?

FC: All right miss, busy and healthy!

(laughter)

AL: Could you tell me what is your profession?

FC: Well I studied biology in Tuxtla Gutierrez, the capital of the state. I am from Frontera Corozal and I came back here after my studies to help the farmers to implement some projects. You could say I am a consultant, on many subjects, sometimes is the environment, sometimes pollution. I have been also involved here at the museum.

AL: So Florencio, tell me, a bit about the museum of Frontera Corozal. Where you involved in the museum since the beginning or in what moment did you become involved with the community museum?

FC: My participation started in the year 2003.

AL And do you know in which year the museum was founded?

FC: In 2002 I think. The construction started in 2001, but the establishment and the end of the construction, and the installation of all the archaeological, the history of the community and some representations of the natural resources was in 2002, more formally.

AL: And was the botanical garden established then as well?

FC: No, no, the botanical garden did not exist at that time. That plan for the biodiversity gallery and the botanical garden started in 2003, but it was not until 2004 that the botanical garden started to be built.

AL: And when you became part of the team in 2003 which where your tasks?

FC: Well at the beginning when they invite me to participate well practically they asked me to see how the museum was and asked me how I wanted to collaborate and we started to write proposals for funding in different institutions, but we never got the support. It was until 2004 that we started to work with the UNAM, the university, with the Institute of Ecology and the Institute of Biology and then they gave us funding and support for different projects within the museum.

AL: Ok, but the museum was founded with money from other sources.

FC: Yes, with money from the state and the federal government.

AL: But they didn't give you more money to do the rest?

FC: No, no. The infrastructure was handed in to us in 2002, the state institution in charge of the regulation of this is Conaculta Chiapas. They gave us the money to set up the museum, but from that time they stopped supporting us.

AL: And so the support comes again when the biologists of UNAM become involved right?

FC: Yes, exactly, and then as a result of the work with the scientists there was a strengthening of the information about our own natural resources, the jungle. We put some photographs, posters, lots of information, and also we gave more emphasis to the *Lacandonia schismatica*, which is a representative species of the jungle of this region.

AL: And so tell me, why is this flower so important?

FC: Well, for us, as professionals it is important because although it doesn't have any economic value, it is valuable for the scientific world. It is a very rare species that is only found in the Lacandon Jungle and that makes it important in terms of recognition and conservation. Many people do not understand it, but to us the people that know a bit about this species, it is very valuable.

AL: So you think that people from the community do not see the value of *Lacandonia*?

FC: Well, no, because it is a plant with only scientific value, not economical. You can't extract, sell, or commercialize it. It has value only for the scientists, not the tourists or the community.

AL: Why do you think it is important that the community has a museum?

FC: It is important because here we find... mm... well... the foundations of our ancestors, the Mayan, so many of the steles that were left here where they inhabited are proof that they were here. And so in this museum we are showing visitors that we as Ch'ol appreciate our origins, we keep remembering our past. So the museum is a very important tool to show the Mayan and the Ch'ol cultures, which come from the same ancestor.

AL: And in environmental terms, do you think it is important?

FC: Same, in the museum we have to represent the different types of ecosystems we have, because that is what is in our jungle. We can find different types of vegetation, rainforest, middle forest, some zones of riparian vegetation, and some bamboos. So it is important to exhibit all that in a museum, and not also the flora but the fauna and the different rivers and basins. It is important to exhibit all that in a museum so that the people can see the immense richness we have here in the Lacandon Jungle. And well we still have many things not represented in the museum, so we have to give continuity to that. It is the next step.

AL: What do you think it can be done to... Well, what do you think does not work in the museum and what does work?

FC: Well, I believe that when the museum has a committee that is interested in the museum, it is a motor that makes things work, we can have many important things inside the museum, but if the people that represent it have no interest then it is not important if we have nice museum, good information and valuable pieces. The museum has no value if we don't make people interested in the museum.

AL: Explain me how does the management of the museum works, how it is decided who the authority is and how often does it change?

FC: The museum is managed by a committee, and that committee is formed by five people. It is formed by a president, a secretary, a treasurer. They are the ones in charge of the wellbeing of the museum. This committee is elected in an assembly, so they are appointed by the assembly, the assembly proposes someone as president for example and if there is a majority in the votes then that person stays.

AL: And is there sometimes someone that proposes himself for the job?

FC: No, nobody. It is always someone recommended by the assembly.

AL: And can he refuse the charge?

FC: Yes and if he refuses to represent the museum then the assembly has to find someone else.

AL: And how often do authorities change?

FC: Every year. In rare occasions two years.

AL: Do you think that this system suits the museum or do you think it should be different?

FC: Well it can partly be helpful, because there are some people that are not interested in working in the museum and so they shouldn't be there but there are other people that have done lots of work for the museum and because it only lasts for one year all they can achieve in one year is stopped when the new authorities arrive. That is one of the problems; sometimes it can be an advantage and sometimes can have some disadvantages because not everyone has the interest of give their own time and effort to consolidate the projects of the museum.

AL: And sometimes they don't continue with the old projects?

FC: Yes, there is no continuity. That happens most of the time.

AL: So only short-term projects can be carried out?

FC: Yes.

AL: How do you think the museum can improve under these circumstances?

FC: Well, one of the ideas I have always had is that, it does not matter if the committee changes every year, but there has to be someone in charge that has a feeling for the development of the museum, and I'm not talking about the whole community, but only the museum, the drive to bring the museum forward has to be present. We need a responsible administrator that is creating new projects and seeing how they develop, that is behind all the progress, taking care of it. We need, in the museum, an administrator that has the will to solve all the obstacles that we face every year. And most of the times, the administrators we have had are not willing to do it, like what we were saying about the botanical garden, it is there abandoned. When the committee changes, because the administrator is not well established and does not have an interest in the museum. So that is one of the failures we have had.

AL: Has the creation of the museum generated some conflicts within the community? Has someone not agreed to have a museum and to spend some of the community's money on the museum? Or is the community happy in general to have a museum?

FC: Well there was a time when the community did not want this museum. I think it was about one year after its foundation. Problems started and the problems were because it is not self-sufficient, we had some visitors but lots of them did not give any donations, donations were destined to give maintenance to the museum. In that time we only had a coffee shop, back then we did not have the restaurant, it was only a coffee shop where visitors could buy soft drinks, juices, cookies, sandwiches...

(Interruption, phone call)

FC: So things were like that, we didn't have the money to sustain all the necessities of the museum. So little by little we started to think what we were going to do with the museum, that was when we started to sell more food, water, we started to sell more things so that the museum could survive. And we generated more income, we cannot say that those income generated profits, we had income but only to maintain the museum. Things are like that until now, we don't have much profit, but the museum is still working. Maybe not as it should be because we lack experience in the management of the museum but it is working.

AL: You told me you are a biologist, right?

FC: Yes.

AL: Which, in your words, is the value of the Lacandon Jungle, the place where we are now? Why is it important in environmental terms?

FC: The Lacandon Jungle is very important because it has a high biodiversity, well that is the case of all tropical zones, but the Lacandon jungle has plant and animal species that are not in other tropical jungles, a high rate of endemism. The jungle has a very big potential. It is a resource that we have to conserve, that we have to use responsibly. We cannot tell the people not to touch the jungle resources because we live from them, since our ancestors, they lived on the collection of fruits and the hunt of animals, but they knew how to do it right. So we have to follow their example, we have to value our resources, we have to use them responsibly, so that we don't drive them to extinction.

AL: Do you think that community initiatives like this one, and this museum in particular help the conservation of the jungles somehow?

FC: Yes, it helps because in the past many people, is not that we are predators, but we had the need to open up spaces to cultivate the land. But for the past six years, talking specifically about the Ch'ol people of the community of Frontera Corozal, I can see that people are more aware of it, in comparison to when we arrived here, when we arrived we had to open up the space to work the land. But now the diversity of activities we have has helped us to conserve the jungle, many people that do tourist activities, the sowing and commercialization of chate (a flower) and other activities that are not aggressive with our resources. So the diversity of economic activities we have in Frontera Corozal has helped to buffer the accelerated use of the natural resources.

AL: Do you think that, in particular, the biodiversity gallery has made people more aware of the resources of the jungle? Or are the target audience mainly the tourists?

FC: No, actually the biodiversity gallery has been very helpful, maybe we are to blame because we have not continued to promote the visit of the students. The elderly, the old people don't really want to be involved in this subject, but the young ones do, the high school, primary school, pre primary, etc, they are more and more aware that the resources we have are very important. They express this in their paintings and even in their homes they say that we shouldn't kill animals, we shouldn't cut trees. They have expressed those concerns, so I think there is now more awareness. However the teachers don't bring them to the museum. So the issue now is to keep promoting and keep spreading the word of the importance of the jungle. The museum can be a space for all students of all levels.

AL: And in terms of culture, do you think that for the young people of the town the galleries of the Ch'ol community, the foundation of Frontera Corozal and the Mayan culture have somehow made them more aware of their cultural inheritance?

FC: Yes, yes that's right. Now kids in school start to learn about their ancestors, they are learning how the Ch'ol people were before, the origins of Ch'ol people, when Frontera Corozal was founded. Sometimes they come and visit the museum because it is there that the information is on display. And is the same with the steles, they are learning and understanding that these lands that we are occupying today were lands of the Mayan culture. They can begin to understand all that because we have this museum.

AL: Ok, but you were telling me that there is no program with the schools of the community, and that that was an issue still to be done.

FC: Exactly, we have to open a space for this to occur, so that we can keep promoting the culture, the importance of biodiversity and of all the resources we have. Because the museum can also be a place to exhibit important themes that are very relevant now, like climate change and pollution, among others. Also, to tell people what not to do, so that we can keep the planet in adequate conditions.

AL: And, well you are not on the board of the museum, you are working only as a volunteer. Why do you do this job? No one is paying you right?

FC: No, no, I don't receive any money. Well I do it because I think that in the time I am here in this community I will continue to help in whatever way I can. That is the idea I have, while I am here I will do whatever I can to help, to try to make history in the community.

AL: So you work here because you think it is important?

FC: Yes, I work here because I think it is important, because we have many projects to keep developing.

AL: And what projects do you have now with the museum?

FC: Well now we have the project of the remodelling and expansion of the restaurant, that is the project we have now. We want to build a façade of the museum that is according to the architecture of the region and of the museum.

AL: The restaurant sustains all the museum right. The committee does not have any salary right?

FC: No, they don't have a salary because they have an agrarian right and as part of their obligations they have to take part in any committee that the assembly decides.

AL: But the chefs, the waitresses, etc?

FC: Yes, they do have a salary.

AL: Do you know how many people are employed in the museum?

FC: I think they are like ten. Ten people.

AL: Do you think that the community has improved in some way since you have a museum? In terms of the everyday life in the community, do you think that has changed?

FC: No, no, well I don't think it has been a fundamental axis of the improvement of the community, but it has been a space where we have much information about the community and its history.

AL: So you are telling me that it hasn't had an economic value for the improvement of the community?

FC: No, it hasn't had an economic value. We haven't had any profits from the museum that allowed us to do other things. The museum has only been a space that is sustained by the profits of the restaurant, to pay for the maintenance of the green areas and the building, the salary of the restaurant staff, etc. However, in a way the museum has brought some economic benefit, because it makes tourists stopping here and visiting our territory and they like the museum and they eat at the restaurant. So even if the museum does not bring any money to the community itself it does help with the economy of the community.

AL: And have you seen that people from the community visit the museum?

FC: Some of them, some of them come. Not many to be honest.

AL: And do you think that the number of community visitors could increase?

FC: Yes it could if we promote it.

AL: And why do you think it is important that the people from the community come here?

FC: So that they learn about what we have here and also to make them more aware of the important things we have here. That's why it is important to keep promoting the importance of the museum, so that people learn the importance of our natural resources, of the culture that has inhabited here in this region. It is important to show people all of that.

AL: OK. And well now I would like to know a bit more about how the relationship with the scientists was during the process of the making of the museum?

FC: Well it was sometimes a little bit difficult. Sometimes we did not understand each other well. Some people in the community were not happy that they were coming here to our lands, you know, some people thought that they were coming here to steal plants and animals. They don't understand the work of the biologists. And they don't like them so they don't let them work. With the museum it was a little bit different because the assembly saw that this project was for the community so I think they reached agreements quite easily. They came with the proposals that they made in the University and showed them to the community members at the assembly and normally they agreed

AL: Ah, ok. So the biologists or the people that came from outside to work with the community never made a consultation of what the community wanted to have in their museum?

FC: No, I think the communication they have is only with the people of the assembly, the community members. I remember some people received some training to go with them as helpers and help them to catch animals and plants for the collection. However, no, there were not asked what they wanted to have in their museum.

AL: Ok and so what do you think of the museum as it is?

FC: I like it, I think the galleries are in good shape, we have managed to keep them in good state and we have also made a good job with the restaurant. We have failed with the botanical garden and now is in bad shape, but we have the will to make it better.

AL: So how do you think this museum could improve? If you could make a list of things to do in this museum to make it work better, what would you say?

FC: Well, if I could do a museum like I have seen in other parts of the state. First of all we have to have a good administrator, after we have to have an interdisciplinary team that can help in whichever way they can. And I believe that could be the essence of a working strategy to have a beautiful museum of high quality that is well taken care by the people.

AL: Ok very well, I think that's it. Thank you very much.

FC: Ok. No problem. Thank you.

Interviewee	Place	Date
Lucía Arcos Mayo	Frontera Corozal, Chiapas	01 December 2011

AL: Good Morning Lucía, how are you?

LA: I'm well thank you.

AL: How long have you been working in the museum?

LA: Three years.

AL: And what do you do here?

LA: Well I am a waitress in the restaurant.

AL: Ah and how did you start working here?

LA: Well first my sister was working here and there were a lot of clients and so she called me to help here. I was at the time working in Villahermosa, I spent two years there. My sister was here and called me to tell me to quit my job in Villahermosa because she found me a job here. So I came here to ask for a job here and I got it. It was during the holidays, when they had a lot of people coming. This past June it will be three years that I am working here.

AL: And you are originally from here?

LA: Yes, and all my family as well. But I had to leave the community to find a job, because I have a daughter. Now she's eight years old, she's big now. So I had to leave to get a job, I was there for two years and then I came to work here.

AL: And was it hard for you to leave your community to find a job outside?

LA: Yes, mostly because I left my daughter here. So I was there and she was here. That's also why I returned. It is much better here, because I have my family with me.

AL: So do you like your job here?

LA: Yes, yes.

AL: And it's the salary enough for you and your daughter?

LA: Yes, well my husband is also working. He works in the fields.

AL: Is he a community member?

LA: No, he's a community member's son. But still he works in the fields.

AL: Lucía, do you know how this museum started?

LA: Well I don't know much, just what I hear people say. That it began because we needed a place to put the Mayan stele. I think it was the assembly that decided and people from Coneculta, the INAH and the University have come to make the galleries.

AL: And during these times that people from the government and university came to work with you, did you attend any meetings or workshops with them? Did you know what they were doing?

LA: No, we would see them in the museum here working, but I did not attend any meetings. I think sometimes they did something with the school children. They came to Frontera to talk to the authorities or at the assembly. I don't think they met with anyone else. I came when they open the museum, there was a ceremony.

AL: So how do you see the museum? Have you visited the galleries? Do you know what's inside it?

LA: Well I have been in the galleries, the day they open we came to see it. Now that I work here I almost don't go inside. But I know what there is, I have seen the photos and the Mayan pieces. They are pretty. But I never read the information (laughter).

AL: And the people from the community, do you see that they have an interest in visiting the museum?

LA: Well, not much, but sometimes they come and visit the museum. Sometimes. But this is for the tourists, they are the ones that come to see the museum and eat at the restaurant.

AL: And the kids from the school? Has the teacher brought your daughter here?

LA: Yes, she always comes and goes inside the galleries to see what we have here.

AL: But she comes to visit you mostly right?

LA: (laughter) Yes.

AL: And with the school? Has the teacher brought your daughter's class here?

LA: No. But some teachers do bring their children here. Mostly from the secondary school. I have seen them one or two times. Not much, I think because the teachers sometimes come from outside the community and don't know what the museum has.

AL: And what do you think about that? Do you think it's important that the teacher brings the children here?

LA: Yes because the museum is pretty and the children that come from outside like it so the children from here might like it too. And it has information where they can learn things.

AL: Do you remember the community before there was a museum?

LA: Mmmm well I don't remember very well (laughter).

AL: But do you see that there has been a change since the community has a museum?

LA: Yes, it was not like this before. The community was smaller, we didn't have many visitors. Now more people come here to visit us. In the high season a lot of people come. Before we didn't have many visitors and now we have them.

AL: And how have the visitors changed the community?

LA: Well more people have more money. More people sell things to the tourists and there is a small hotels, more like cabins. They called them eco-cabins, but I don't know why (laughter). Also there are more boats to take tourists to the river and Yaxchilán. There are more jobs, like me, I can stay here because there are more jobs.

AL: And if you were not working here where would you be?

LA: Well I think I would be at home (laughter).

AL: So you wouldn't go out of the community again to find a job?

LA: No, no. When I did it I was not married, but now I have a husband and well now I can't go to live wherever I want (laughter).

AL: Ah ok. And so do you think that the museum is good for job creation here at the community?

LA: Yes, because when we have a lot of visitors we can hire more people here. When we don't have much people coming, the museum cannot offer much job opportunities. There's one girl in the kitchen, and only one waitress when is low season. Ah, and the people that do the housekeeping. If we have no tourists we don't have income.

AL: And do you think it is important that the community has a museum?

LA: Yes.

AL: Why?

LA: Because when people come they enter the galleries and see the steles we have here and then they take pictures or something and they take it home and maybe they show other people.

AL: And why is it important that they see it?

LA: Because then they know about our culture, about the Mayans that lived here before us.

AL: So you think that the museum is helping that the people from the community also, apart from the tourists, are aware of the Mayan culture?

LA: Yes, because sometimes the children come and make their homework here. They get the information on the community here.

AL: And Lucía, do you think that the conservation of the jungle is important?

LA: (laughter) Well, when people from outside come they like it when it is nice and beautiful and fresh.

AL: And what about the people of the community?

LA: Well I think it is better that people don't destroy the jungle and cut down the trees we have, because we live in a beautiful place and if we destroy everything, what are we going to have left? Our children will have to move away because there will be nothing left here.

AL: The people of the community are interested in conserving?

LA: Some people are interested, they do follow and they sometimes make meetings when they tell other people to stop cutting down trees. Some people listen and some not.

AL: Ok. Well that is all. Thank you

LA: Thanks to you.

Interviewee	Place	Date
José Antonio Pérez	Frontera Corozal, Chiapas	01 December 2011

AL: Hello José Antonio, how are you?

JP: I'm well thank you.

AL: Ok so tell me about your job

JP: I am in charge of maintenance, cleaning, etc. I clean the toilets, pick up the rubbish, brush and mop the floors of all the galleries, and also trim and cut the grass and try to keep the botanical garden in good shape because grass grows very quickly.

AL: For how long have you been working here?

JP: I have been working here for five years more or less.

AL: You look very young, how old are you?

JP: Nineteen

AL: So you started really young.

JP: Yes. My dad has a field, but we still need money and with my work here I contribute to the family's expenses.

AL: And do you also work in the fields?

JP: Yes as well, when I'm not here I help my father in the fields or with the animals. In the low season there is not so much to do at the museum so I go to the fields, or in the evenings as well.

AL: And which is better for you?

JP: To work here.

AL: Why? Do you earn more?

JP: Yes, but not a lot more. We have small salaries. I like it more because is less tiring. Working in the fields is harder.

AL: Is your dad a community member?

JP: Yes he is, that is why he has a piece of land in the community.

AL: But you cannot have a piece of land until you inherit it from him right? How do you see this situation?

JP: Well, for me it's not so bad, because we are not many. I am the only son, I only have little sisters, so I'll inherit the land. But if I had more brothers then the situation would be bad. Then we will have to share or go work outside the community, I don't know.

AL: And your sisters?

JP: Well I guess they will marry one day and will get what their husband has. Me, I'll have to provide for my family when I marry.

AL: How do you find your work at the museum, do you like it?

JP: Yes, is not very tiring and we get along well.

AL: And well since you spend your days here at the museum you must know it very well. Could you tell me what do you think of it?

JP: Well I think the museum is working well, we get many visitors and they enjoy coming here. That is why we keep it clean and nice, so visitors come to see it and to eat here. And there have been some projects to repair some damage from the rain in the galleries and the restaurant is being remade, is going to be bigger. I think also the botanical garden will be changed. So it is in good shape, the museum. We have lots of people in the holiday season, although during low season is almost empty and there's not much to do.

AL: Your work here is valuable?

JP: Yes, because even if I have a small salary the job here allows me to collaborate with my family's expenses. If I did not have this job maybe I'll be working in the field or I would have gone to "the other side" to the United States.

AL: Many people from here emigrate there?

JP: Yes. Especially young people like me, nineteen or twenty years old go there to find money.

AL: Have you seen any changes in the community since the museum exists?

JP: Yes, well last year we remade all of this (the entrance and restaurant), before his was not like that. And up there (the galleries) are also being remade. The museum is getting bigger and also in the community there are more things for the tourists, like the eco-hotel, more people sell their handcrafts as well.

AL: So you would say it has been a positive change?

JP: Yes. For example now the road is being built, they are making the town look nicer, because the tourists prefer to visit places that are nice.

AL: Ah ok, well. Do you see people from the community coming to the museum?

JP: Well no, not really just a few people from the community come here to visit the museum. No one is really interested in visiting, some people have never been here.

AL: And what about the children of the community? Did you study here in the community?

JP: Yes I studied here.

AL: And did your teachers bring you to the museum?

JP: No, never. But now that I work here I have seen that sometimes teachers bring their students, the teachers from the secondary school. Me I just went to primary school, after I left.

AL: Why do you think the teachers don't bring the students?

JP: I don't know. Well some teachers are from here but most of them come from outside. So the ones that are from the community bring their kids to visit the museum, but the other ones never do it.

AL: Have you seen any involvement of the community with the museum's activities? For example when the scientists or the people from outside came to help the community in making the galleries, did they make workshops, assemblies, conferences to explain their work to you?

JP: No, nothing. I have never seen them in activities like that, I guess is because this place is more for the tourists. They made assemblies with the authorities but not with us.

AL: Do you think it is important that the community has a museum?

JP: Yes, it is important. Because then we have tourists that visit it and we can show them everything we have in the community. We have the Mayan steles and other things and it is important that the tourist see it and that they learn what we have here in this community. They can learn a bit more about us.

AL: And so do you think it'll also be important that the people of the community came here as well?

JP: Yes. I would have liked that my teacher brought me here when I was a school kid.

AL: What do you think about the museum? Have you been inside the galleries?

JP: I like it, I think it's pretty. I like the gallery of the biodiversity, because it has many photos and the plants and animals. I liked the botanical garden as well, before the floods, when we had lots of orchids.

AL: Do you think that the museum helps the conservation the Mayan culture and the environment?

JP: Yes. Because it can make people aware of what we have here. They can see what we are managing to conserve here, what we still have.

AL: Which people?

JP: Well the outsiders and also us, the people of the community.

AL: Do you think it is important that the environment of the community is conserved?

JP: Yes. I think it is important so that people stop burning and cutting more trees, killing all the animals that live in the jungle.

AL: And why is it important that people stop doing all those things?

JP: Well so that we stop polluting and we keep our resources. If we don't have a nice community tourists will stop coming and also if we destroy our lands we will not be able to plant and provide food for our animals. And well also for us, because we live here and our resources are valuable, like having clean water that we can drink or use in the house.

AL: And do you think that the museum is helping that?

JP: Well I think that it could be helpful if there was more promotion. Because if people don't come here to see what we have, for example, all the animals we have in the jungle and why is important, then they will destroy it, without thinking.

AL: Do you have any other conservation campaigns?

JP: Yes, people from CONANP and PROFEPA come here and gather us in the auditorium and tell us what we can and can't do, like cutting trees and burning the forest, but some people go to these meetings and still carry on doing what their not supposed to. They sometimes don't even listen to the CONANP and PROFEPA. People are still burning the forest.

AL: Ah ok. Well I think that's all. Thank you for your time.

JP: No problem. Thank you.

Interviewee	Place	Date
José Mendez	Frontera Corozal, Chiapas	01 December 2011

AL: Hello Don José Mendez, how have you been?

JM: I'm doing well, thank you.

AL: I would like you to tell me what is your occupation?

JM: I am a farmer. I work in the fields. I also have some animals.

AL: And you are a member of the community of Frontera Corozal?

JM: Yes I am. I arrived here when the community was founded.

AL: How long have you been working in the museum?

JM: Two years almost, I started in 2010 and now it is late 2011 so yes almost two years now.

AL: How did you started?

JM: Well at the beginning I had not idea of how to run a museum. I have been working in the fields all my life, so I don't know any museum related stuff. But the assembly appointed me as president of the museum committee, and my task is to see that the museum is working well. And I accepted the job. We started to see what was left to do, what other committees have achieved so far. We are three in the committee, there's a secretary and a treasurer. We're supposed to have a security person as well, but no one wanted to take the job so we don't have one. And so us three started to work and we saw how the museum was before we arrived. Our observation was that the museum was very abandoned. There was not an intention of the authorities to improve it. The commissioner and sub commissioner have no intentions of coming here to see the state of the museum. It was abandoned by the authorities of the community. The committee is appointed but we don't have any knowledge, no one came to give us training or any kind of workshop, we just started the work like that, without any knowledge on how to do this job. So I told the other two men of the committee that the museum was very big and is doing its job, it was ok, but it was very abandoned. The museum needed that we put our interest here to pick it up. We had to see people and knock on many doors to see who wanted to give us financial support to make it better. The first thing we fixed was the roof of the restaurant and the Mayan gallery because it was falling down. We had to submit papers and ask for money. So we made the application and they approved it we got the money from CDI (Indigenous Development Commission). And with that money we started to improve the restaurant. And that was the first project we had. I was the person in charge of the project, so I had to overlook the construction, pay the workers, buy the material. I was the person in charge of the construction, but we also had an architect that came to help us. So that's how we started to work and now you can see we have improved the restaurant and we have made it bigger. And after there was another funding opportunity that we used to repair the old chair and tables and to buy more chairs and tables. So that is how we are working. We are improving every day; we are getting the hang of it, getting more confident with our work.

Now we have more knowledge to improve the museum, to make it bigger. Because in my vision, this museum cannot just be left like that, abandoned, it has to grow, to get bigger. The museum is property of the community, it belongs to everyone but the authorities were neglecting it. They say that is because they trust in the committee that they appoint to supervise it, but still they have to supervise the work that the committee is doing here. They show no interest. If the authorities have no interest in the museum no one in the community is going to have an interest in it neither. That can't be. We have to be united to see that the museum is going forward. The committee put some pressure and the authorities started to have more interest and we got the funding we applied for.

AL: And if I understood well, the funding was provided by CDI right?

JM: Yes.

AL: And has some other government or independent office give you funds for the museum?

JM: Yes, INAH (National Institute of Anthropology and History) is giving the money to repair the roof of the Mayan gallery.

AL: Why do you think that the past committees and authorities had no interest in the museum?

JM: Well, according to what I know the past committees did receive some training on how to do their job, however they didn't make the museum work. So all the training was in vain. So past committees didn't do a good job before and many mistakes have accumulated here, that is why this museum was not working very well. They did not take the management of the museum seriously. I thought when I started that the museum had to pick up, and how do you do that? By putting interest. By putting interest and by appropriating it. We have to think that the museum is ours, although it is not only ours, it belongs to the community in general. They have given us their trust to manage something that is everyone's. We have to be worthy of that trust and manage this museum, that is the people's property in a good way. Each member of the community has a little part of the museum, and that is why we have to improve it.

AL: And what do you think needs improvement in the museum?

JM: Well here in the museum we have lots of work to do, but all these improvements need a lot of money as well. We have to change the roofs of all the other galleries, all the beams and palm leaves have to be changed. We still need to repair those and we need money, and the museum does not have much money. As I was telling you before, the previous management work was not very good. The money we make is enough to cover the salaries of the people working here and the housekeeping expenses, including all the services, like water and electricity. So the little money we make we spend it in those expenses. That is why I think we should integrate other touristic services to the museum, maybe some small eco-cabins as a hotel or a boat service to the Yaxchilán Ruins. That is what I think needs improvement. If we achieve this we are going to have more money to invest and the museum could do better.

AL: So, you were telling me that the museum has not much money and the income that comes mainly from the restaurant

JM: Yes is only enough to pay the waitresses, the security guard, the maintenance person, and all the services. We do manage to save a bit, and those savings are kept in the bank.

AL: And it belongs to the whole community.

JM: Yes, we use it only for museum's issues. When the community needs it we can give that money for other community issues as well. All of this is decided in the assembly.

AL: Do you have any idea how many visitors come to the museum per year?

JM: Well I don't know now. We used to have a book where we keep a control of how many people come here, but I don't have it with me at the moment. It varies a lot, in low season we can have 10 or 15 or 8 visitors per day. Sometimes we don't have anyone coming to the museum or the restaurant. I think we are managing to attract more visitors because now we are putting a very nice restaurant and we are remaking the Mayan gallery. It was not so beautiful before. When the high season arrives we have around 100 or 120 visitors per day maximum.

AL: So the visitors that come to the museum are from outside the community?

JM: Yes, the majority of the visitors are from the rest of the country, but we have also foreigners, that come from other countries.

AL: Have you seen, in these two years as a president that the people from here from Frontera, maybe the school kids or the housewives, come to the museum interested in seeing what's inside?

JM: Well, not really. People don't show interest in the museum. It is very rare that someone from the community comes to the museum. And well the kids, it depends on the school and the teacher and the subject they are studying. Sometimes they do come to make their homework on the jungle or the Mayans. Because the information is here.

AL: So you have seen that the teachers bring the kids to the museum?

JM: Yes, they do bring them. Not often but sometimes. Like two times a year.

AL: Do you think it's good that children come? And why?

JM: Yes is good. The museum has information, as I said before, so the children can come here to learn. And well this museum belongs to everybody so it also belongs to the children. I think that we need to be proud of our ancestors and if the kids don't know anything about their history and their environment how can they be proud? They have to learn and they can do it here.

AL: Why do you think people show no interest? Do they know that this museum belongs to them?

JM: Well I don't know. I think they don't come because they do not know what is inside it. Very few people of the community knows what is inside the museum and that's why they don't come. Maybe some people come here but not many. Sometimes if they come they see the museum very superficially, but they don't want to expand their vision and knowledge or to be happy about their museum. They don't know. And you know what? We still have many Mayan pieces to bring that people have found in the territories of the community, but that requires work and money. Or we could also plan to make tours with the tourists

to the jungle. As I told you before it is possible to find ways to make this museum work. The thing is that we are supposed to do only one year in this post. I have been two years here because I want to stay here longer, to finish these projects that I have, to finish properly and make a report to the community. But my job here ends soon. I don't know if the next person that comes to administer the museum will have the motivation to do it well. I feel very sad about it, I feel sadness. Because I put a lot of my strength and ideas into the museum. I am the only one having ideas here, no one else. My team of workers here do not propose any ideas, but what is very beautiful is that they support my ideas and we work very well as a team. That is how the museum is working now. But I don't know what is going to happen when I leave. I can't be here all the time because I also have work in the fields, now I have my fields a bit abandoned because I am putting all my efforts here. I would like to leave a good image of my work to the community; I don't want to fail them.

AL: And if you wanted to stay more time, could you do it?

JM: No, this is only a service to the community, I do not get paid for the post. And it is supposed to rotate among all community members so I can't stay here for many years. Also I need to do my work in the field, I have to do it to feed my family. I also work in the ironmonger's. You know at the entrance of the community where you found me? Well nearby I have my little shop. I am an ironmonger as well.

AL: Seeing all your motivation and your interest to make the museum work I want to ask you why do you think it is important that the community has a museum?

JM: Well I think it is important for the community, because it has a lot of needs. The bad thing is that the community has no interest in finding out what is inside the museum; the only thing they want from it is the money. No one knows how to make the most of this project. But it is important, look we have the reserve, the Montes Azules Natural Reserve, which is very beautiful and we also have this museum that is very beautiful, so we could make more of it. We should take more care of these two things. We are maintaining the museum, but there are no proposals for improving. People's brains are not into it. We have a beautiful museum, but it is necessary to get more organized. For example, to make the botanical garden more beautiful.

AL: And how do you think that people from the community could get more interested in the museum?

JM: Well what I do to make the community more interested I always speak at the assembly, but well some people have good heads and some people have bad heads. Some people do not believe what you tell them. Some people believe that I am here getting richer, that I'm keeping some money of the museum for myself. Some people are envious. But they do not know, they don't think. If they managed to think a bit more they are going to see how many opportunities the museum has and they would get involved to work here or to take care of the museum. We can achieve lots of things if we stick together, if we are united. If the community has no interest, even if there are some people that want to improve, this project will not succeed.

AL: And who goes to the assembly?

JM: The community members.

AL: And the women and the non-members?

JM: No, only the community members go.

AL: They are all men?

JM: Yes.

AL: And how many are they?

JM: 601.

AL: And is there any other way in which the non-members, like women or children, can get involved in the decisions concerning the museum?

JM: No, not really. We should involve other people apart from community members, but the rules say that only community members go to the assembly, so it's hard to involve them. Still I think we should inform the women and non-members of what we do here and maybe like this they will realize the museum belongs to us all and will show interest in coming here and make it better. Maybe that is what is missing. Because they do not know the museum. They do not think about the role of the museum. And the museum brings us many things.

AL: What do you think is its role?

JM: Well its role is to allow us to see everything. The museum helps us to conserve what we have here in our reserve, it helps us to conserve our Mayan patrimony. But if the community does not see this then the museum is not going to fulfil its role. The museum will stay death, cold. But if the community members saw that the museum is bringing us good things, people will support it and will also take more care of the environment. But they have to see the positive role that the museum has. Like I see it.

AL: And besides the role of the museum as a place to conserve Mayan culture, do you think that it also helps to conserve the natural environment ?

JM: Yes I think it helps. Because we will all put interest in conserving all we have and stop destroying the jungle. We have to protect our jungle. I think this is one of the functions of the museum.

AL: Why do you think it is important to conserve the environment of the community?

JM: Well the community settled 32 years ago here and in this time we have seen how the environment has been deteriorating and if we don't take care of our mountains, our reserve we will finish them one day. We have people from outside coming to tell us that the jungle is being deforested and that is not good, but we also see it for ourselves that it is true. Tourists like the mountains, the jungle, that's why they come. That's why I think that if the community were in the right mind frame they will see that this is important, because more people from outside will come to visit the jungle. Well that's how I think, my opinion.

AL: Ok. And in terms of work is the museum generating employment?

JM: Yes it does, not much at the moment. But again, if we are working well and if we manage to improve it then we could have more people employed here.

AL: How many people does the museum employ now?

JM: Now we only employ six people, three girls working in the kitchen, two waitresses and the maintenance guy. Plus the guard that takes care of the museum at night.

AL: And all of them are paid employees right?

JM: Yes. We don't pay much, but it is enough at least to buy some groceries. It is hard here for people that have no land or other resources. They don't have much money but it is sure. The tourists are bringing this money to the community. That's how we can help the people that work here.

AL: You told me that the community has been here for 32 years right?

JM: Right

AL: And before that you were located in another place?

JM: Right

AL: And where was that?

JM: It was not far from here, towards Nueva Palestina. Well actually, many people came from different parts. For example I came from the municipality of "Salto de Agua" looking for lands. But many people came from Tilla, Sabanilla, Tumbalá, Palenque. They came to settle here outside the Lacandon Jungle. We were 23 communal lands in the Lacandon Jungle, but after the decree of the reserve the government the Lacandon people did not want us to live in their reserve, because they thought that we were going to finish the resources of the jungle. So after, this 23 communal land people came together and made an assembly to try to make them change their minds and to fight for our rights as people from here. At the end, after many commissions to Mexico City and the capital of the state and many discussions, etc. we managed to have this arrangement. We are still in the zone of Lacandon Jungle but outside of the Lacandon lands. So part of the agreement with the authorities was that we were allowed to stay in these lands but that we should congregate according to our ethnic group, so all the Ch'ol people came here to the bank of the river, in the frontier with Guatemala, the Tzeltal people stayed in Nueva Palestina and the Lacandon stayed where they were. So that is how we arrived here. That is the agreement to which we arrived with the authorities.

AL: And why did the Lacandon have the permission to stay in their lands and you were moved to other places?

JM: Because the government had a preference for them and said they were the ones in charge, the owners of the Lacandon Jungle. They said it belonged to them.

AL: Why?

JM: Well I don't know. Also the government likes them very much, they are always protecting them. So they discussed with the authorities and got the lands. But well now we feel more that we live in a community, we are three different ethnic groups in three different places but we feel more like a big community.

AL: Ok and one more question. You were saying that it could be nice that the museum had a sort of eco hotel and some boats to take tourists to Yaxchilán and well I have seen there

are people offering already these services in the community. Are these initiatives communal or private?

JM: Well no, there are working groups that are private. They are community members but their businesses are private. But in contrary to these, everything that we have in the museum belongs to everyone; everyone is part of the museum. We all benefit from what the museum earns. And the benefit of these businesses is only for their owners. That is why I say that the museum has to be supported, in this way we are generating more employment and the sons and daughters of the community members will have a place to work. In the private initiatives only the sons and daughters of the owners can work, no one else in the community can start working there. But in the museum everyone can potentially find work, if we have many tourists.

AL: So you would say that the interest that the people have in the museum is more due to the economic benefit than to the potential that it has to conserve the culture and the environment?

JM: Yes, you are right. But if they knew what the museum has to offer and its potential they would be more interested. The museum has a lot of potential, not only in economic terms; it can also help us to feel more proud about our ancestors and our culture. I just hope that the next committee in charge of the museum shares this view, so we can keep up with projects and don't abandon the museum.

AL: I believe that is it. Thank you very much for your time.

JM: No problem, Miss. It was my pleasure.

Frontera Corozal

External Collaborators

Interviewee	Place	Date
Dr. Elena Alvarez Buylla	Mexico City	5 th December 2009

AL: Good Morning Dr Alvarez Buylla, I would like you to explain me your current work here at the university?

EA: Well I am head of the research group of molecular genetics of development and evolution in plants, here at the Institute of Ecology. My research involves combining evolution studies of key genes in the mechanisms of development, as well as comparisons in the mechanisms of development of species with contrasting morphologies, we do this with the study of genes involved in the development of different plant structures.

AL: I am interested, as I explained you before, in your work with the community of Frontera Corozal. How did you become involved with the community and how did the museum idea started?

EA: OK, so the work in the community of Frontera Corozal Chiapas was initially motivated due to the fact that there is a flower very close to the community that is very particular, *Lacandonia schismatica*, a species that we have been studying from the perspective of its development. It is the only species of angiosperm, plants with flowers, that have an inverted system in the reproductive organs. The stamens in the centre and the carpels surrounding them, contrasting with the rest of 270.000 species of angiosperms that have the carpels in the centre and the stamens surrounding them in the hermaphrodite flowers. And well these structures don't exist in the unisexual flowers. So this plant was discovered in this community twenty years ago by Esteban Martínez, and this is a Ch'ol community. There are three main ethnic groups in the Lacandon Jungle that were given the right to land use by the government, Ch'ol, Tzeltal that live in Nueva Palestina, the Ch'ol are basically all in Frontera Corozal and the Lacandon that were the original indigenous community of the area, in their lands, by the way, they also have *Lacandonia schismatica*. So the reason of our collaboration in this particular project with this Ch'ol community it is because it is the closest community to the locality where the *Lacandonia schismatica* was discovered. And one of our interests was to promote community activities that allowed sustainable actions to generate options so that they were able to conserve the area where *Lacandonia schismatica* is growing. All of this, with a perspective and vision that I have since I was a biology undergraduate student, when I did ethno-botanical research, to understand deeply which are the relations and limitations and interactions of rural communities with nature. In the search of a more dignified life and a more equal distribution of the benefits of environmental services and a bigger participation of the community. If all of that were to happen they would have better and more equal life conditions and as it has happened in other places, that generates options and it pushes organizations and institutions to achieve a sustainable development and conservation of natural resources. So this is a personal interest that I have for many years. And with this interest, this vision as a motor, as Ostrom the Nobel Prize winner once pointed out, these institutions of traditional organization have the capacity to conserve their natural resources through self management, sometimes with academic institutions, but more importantly anchored in their capacity of local governance and organization. I want to make it clear that, and this is my vision, most of the massive destruction of the environment has to do with structural issues and not with lack of knowledge or bad

intentions of the local communities. They do have a lot of traditional knowledge, not the civilising, dominant view, and the imperialist capitalist model of production. It has to be said with the words that correspond them. This model implies that everything, everything possible has to be put into a market logic. That vision is very damaging to nature. Furthermore, this model has been based on technologies that have been poorly adequate, like the hydrocarbon fuelled energy. So with this vision that goes beyond this project in particular, and with the excuse of an academic matter and a geographical place where a plant is grown we decided to make a more ambitious project that went beyond our own interests as researchers to use this species as a model; we wanted to see if we could collaborate with the community to generate some initiatives anchored deeply in their own institutions and organizational forms of governance, of use of their own resources, of knowledge and appreciation of natural resources and also with a more equal distribution of the possible benefits of the use of these resources and environmental services. With a vision that nature should not be privatized and in the moment that it becomes privatized it becomes merchandise immediately. For example, the green bonuses and all that business, and well the destruction of the biodiversity is bound to happen because the market logic is like that and the imperialist and monopolist vision are worst. So that is also reflected in the history of chiefdoms and political favouritism and all those practices that the Mexican government with increasing attention to the global markets has been establishing with the local communities and that has generated many vices. Vices and also resistance to have a more genuine participation, they are always waiting to receive benefits in return of destroying the Lacandon Jungle searching to sell the precious woods to private companies or animal trafficking, etc, etc. So having a clear vision that these situations have generated very strong contradictions partly because ethnic groups have been used by the government. Well actually this whole story has been published recently, by the UCCS (Union of Scientists with a Social Conscience) and well you can find the books of Jan De Vos, so well there are many documents that tell this history in many ways, for example what Andrés Barreda has written. I'd invite you to read this because this is the historical frame with which we are working. We were not naive in this sense and we didn't have the idea that science was going to save nature and that we had to let them know about it, on the contrary we knew that there were lots of contradictions that the communities of this three ethnic groups in the Lacandon jungle were benefited in a moment that the government decided to use the jungle in a very responsible way to ease social conflicts, they gave them their lands in a very unequal way compared to other communities that were settled in the jungle before, some of them that have affinity with the Zapatista movement, so they gave them the communal right to use big plots of land, always with the vision to manipulate them, to use them in a total corrupted way to have access to the jungle's resources, to make commercial agreements with timber merchants. All of this generates deeply rooted vices, it generates breakages in the traditional communal laws, corruption within the communities, and well these are the communities with which we are collaborating. They are not ideal communities, they are not even honestly committed with certain principles, but with many vices as a result of this manipulation, of this relationship with the government that I have resumed in a very blunt way. So I invite you the texts of Andrés Barreda, some of the texts by Jan de Vos especially in historical terms, the document that the UCCS is preparing and will be published in a few months. It is a very good abstract.

So, with all this background and knowing where we were getting into, a community with chiefdoms and used to political favouritism. However, they have an assembly and generally they respect the agreements of the assembly and this is the type of institutions that we need to promote and to make more righteous and equalitarian, introducing new ideas, like gender equality, etc. So we entered to this community. There are Ch'ol, Lacandon and Tzeltal and we decided to work with the Ch'ol because they had the control of the lands where the plant *Lacandonia schismatica* can be found. We knew that within the

community there was a lot of confusion and misunderstanding with *Lacandonia*, “is it going to be the panacea to cure cancer?”, because you know people from Cancer Research came to collect the plant. They wanted to know why we were so interested in the plant and the plant started to be for them a merchandise they could exchange, because they have been used to political favouritism. So it was, and still is very difficult to work with this species, due to this very foul relationship. On the other hand the Lacandon in their communities have, at least in terms of use of resources a more traditional relationship with nature, matching their traditional practices that have been used for the conservation and the sustainable development since many, many years. But the Ch’ol community are more industrial and have a certain community organization, they are indigenous people that respect certain institutions like the assembly, and are very cautious with their resources that they consider can benefit them. They have certain communal institutions but also have certain private initiatives that have been establishing agreement, in a very opportunistic way, to separate the Ch’ol into small groups and have more benefits. So when we started to work in the community the Ch’ol community was the one pushing to establish a collaboration agreement and so we started to have a stronger relationship with them. One of the most important objectives was, because they are recent colonizers and they don’t have a deep knowledge of the area, whereas the Lacandon people do have it, to help them to revalue the resources of the jungle, the richness in plants and animals and discover as well, because they are originally from an area near Ocosingo, close to Palenque that was very different to this area in which they arrived recently. So it was very important for us to be able to work with them, to collaborate with them in this revaluation of the resources and this mutual awareness of the importance of these resources to conserve, not only *Lacandonia*, but also other species. Our objective was to try to generate a land use planning; this is the subject of two master’s degree dissertations of two students in the Geography Faculty. So we wanted to use this knowledge as a basis to propose the community a land use planning to recover lands and to connect. Well their lands are exactly in the place of a possible biological corridor between the Sierra Cojolita and the Mayan Jungle of Mexico and Guatemala and also connecting the small reserves that have been created around this Ch’ol community of Frontera Corozal. The Sierra Cojolita and these small reserves could then connect to both the Guatemalan Mayan Jungle and the Montes Azules reserve in Chiapas, Mexico. So that was our aim, and on top of that to be able to conserve the areas where *Lacandonia schismatica* lives. So as a first objective, well we have made many, many meetings, we worked really hard. I think I sent you many of the documents and I can send you more or I can ask Diana. And well we advanced in small steps. The first one was to declare a reserve of 30 ha, that is very small but it is enough to maintain the most nearby areas where *Lacandonia* grows, if it wasn’t for this *Lacandonia* would be extinct now, it is highly threatened, the area where it grows is surrounded by stock grazing land and it is very close to the road.

AL: That is the reserve of San Javier?

EA: No. That is in another place. This one is the one that is in the crossing of the road that leads to Frontera Corozal.

AL: Ah ok, yeah I know which one.

EA: So what we wanted and what we proposed to the community members was to reforest the areas that surround this land and that are transformed into stock grazing fields to make a corridor between the jungles where *Lacandonia* is and the Sierra Cojolita. That was very difficult to achieve, we started to get aggressive behaviour of several of the community members that started to feel threatened, because even though they are living in communal organization some have managed to have much more land than other ones. And well the lands of most of the powerful people of the reserve are very close to the place

where this species lives and we even had some threats from some of these people, that well they are a bit like the chiefs of the community, they have a lot of land and a lot of cattle. There is a very clear socioeconomic stratification, which shows you one of the contradictions and symptoms of how the macroeconomic structure impacts in the dynamics within the community, and are at the end the causes of the natural destruction. There aren't any governmental programs that promote land planning in the communities, extensive livestock grazing has been promoted as a good option for development and that has been disastrous for the jungle, causing irreversible damage. It is a social tensor that from within the communities generates big socioeconomic differences without any regulation, because this type of livestock farming type is not promoted in a way that can help to homogenize living conditions. Also the livestock farming that should be promoted here is the intensive type, not extensive, given that the soil here is very fragile and unstable, which makes it very likely to erode when the jungle has been cut down. Well that was one of the first obstacles of our project. Another very important point is that the different ethnics have been polarized and confronted in the Lacandon jungle, with very complicated causes, in the issue of who owns these lands, do they belong to the Ch'ol, the Lacandon, the Tzeltal? So to come up with an agreement for land planning to be able to conserve it, and to make it connect with the reserve of Frontera Corozal was very complicated, we have not been able to do it and it is something we are still working on, with the work of these two students and with the analysis of the UCCS. We want to keep the debate going and to construct viable alternatives for the development. Meanwhile we started to make a census of flora and fauna of the area, to show the value, and also to ask us how much unknown diversity is in the area where *Lacandonia* is growing. Because of the peculiar characteristic of their soils, other characteristics and the knowledge of Esteban Martinez we had the hypothesis that it could be a zone of very high endemism. And we could use this information, which we are going to publish very soon, to drag the limelight and get the international and national attention, so that we could have more support in the conservation of this area. Also I think it is important to make this whole process a bit transparent, that is why I think it is very important that someone like you gets involved in this project and sees all the contradictions that we have in these communities and how these communities are a reflection, a symptom of the macro situation, not only in Mexico, but in the world, that is making an impact on natural resources' conservation. I think it would be fairly straightforward to make projects of communication for the conservation mixing traditional and formal science to look for alternatives, if there was a global and national organization to facilitate it.

So we made a census and we started to look for ways to support the community to make this a window, that worked both ways, about local richness and all the knowledge that we have generated with them, both for local communities and the visitors, and the scientific community, because traditional knowledge is very important and there is normally a disdain for this kind of knowledge. So that is why we established this gallery. There was a very valuable participation of Coneculta Chiapas because they let us participate in the renovation of this gallery with all independence. If you see the discourse of the gallery you can see how it establishes the importance of having a dialog between these two sides of knowledge, in search of a self-managing alternative for conservation, knowledge and sustainable development of a highly biodiverse zone like this one. We had the surprise of finding 25 new species, and we didn't even make an exhaustive census. 25 new species in one year and a half of census! This is very alarming because it shows how much we don't know about the jungles.

There is a misuse of monetary resources that have been invested with the excuse of conservation of the Lacandon Jungle, but only with personal benefits in mind, sometimes even NGOs do it. So it would be very interesting to find out how much money is being injected with the excuse of knowledge creation and resource conservation in the jungle and how many results have been generated. We, in one year and a half, with not many resources only the money of my research project at the university, coordinating a group of

taxonomists and specialist of the Institute of Biology, we discovered more than twenty species. So well this is interesting. Our priority, before even publishing the results was to communicate it to the community, they were involved and we made a first stage of the botanical garden that has not been appropriated by the community, which gives you an idea of the difficulties that working with this community poses. We planned the process like this on purpose, we wanted to be the ones starting the processes and then withdraw and leave the community to manage them afterwards. We wanted also to re make the restaurant that they had and was not working very well and also to include other cultural factors, like the sell of handicrafts. When we inaugurated it was really pretty and well I want to go back to see how it is now. We left a lot of material for them to have and to sell, t-shirts, videos, postcards, etc. Which we did with the help of science popularisers. Everything that was reflecting all our work with them, well you have seen it, the botanical garden the new gallery, the panels, all the effort that included architects, popularisers, etc. The community participated very actively with the group of researchers that were in the project and the agreement was that it was an initiative that they will have to appropriate later on. The restaurant, the shop, all the prints to do t-shirts and many other things, you probably have seen it all, they were supposedly going to use it to have the means to maintain the botanical garden and the new gallery. So after we finished the census of flora and fauna we communicated it to the community, there are specimens of all the species, or almost all, *Lacandonia* is at the centre of the room, there is this discourse of the importance of a dialog and obviously the importance of the predatory modes that are behind all the contradictions that are experienced by all these communities. All of that appears in the panels. Also, we made very scientific panels, with a more elaborate language but establishing the dialog with traditional knowledge and its reflection in the use of medicinal plants, food, traditional planting techniques, handicrafts, etc. This is what is in the other section of the gallery. We inaugurated the botanical garden and the gallery and there was a great interest by the people. The community rules itself by communal laws and the assembly. The museum was given so much importance in the traditional institutions that they established a museum committee. We have been working with several of these committees, some better than other, some more interested more involved than others. So we gave them training, both in the technical and the management and administration side. We made the menu, we helped them with the menu. So we made many training sessions and we left them with this idea of them taking it as a self-managing institution of the community, not private, that will allow the community to have their own botanical garden and community museum for their own cultural and educational enrichment and to have a window towards the biological richness of the area for the visitors. And also well with all the biological collections that we have from the area we are carrying out a rigorous analysis and we're about to send a report to try to put more emphasis in the importance of the area, using *Lacandonia* as an umbrella species but highlighting all these new species that we have found here in the zone of Frontera Corozal. So, we are working here, besides having an academic interest, for the recognition of the international community of the importance of this zone. So, we backed off from the project and we left it to them. We're still working in the area because we are still collecting *Lacandonia* and we go there every year and we offer them some consultancy work. But we have left them to appropriate the project of the museum. I'm going at the end of the year to visit them. But what we know from our yearly visits is that the botanical garden has been abandoned, it hasn't been maintained properly, despite the fact that they have many visitors. If you go online there are many websites that refer to this garden and museum. But the community has failed to achieve the aims that we set together. They have not given proper maintenance to the botanical garden, but they have kept the restaurant going, which makes evident that everything that gives them a direct benefit is seen as important. What they do with all this resources remains unclear to us, it is managed by the community. According to what we saw last year the gallery was well maintained, nevertheless there has been some damages in the building structure because of sun and

rain that would need some repair done. The restaurant is also maintained in good condition, obviously not as good as when it was just opened, when the kitchen and everything was kept well. But they have not reinvested, as our agreement stated, in making new handicrafts and merchandise with the designs that we left them or with new designs. They have also not generated workshops with the school children, as our agreements said and they have definitely not kept the botanical garden in good conditions. Which are the challenges? How do you make a community like this to get involved in the project? I keep thinking about possible solutions to these problems, maybe we need the University to get more involved as an institution, because this entire project was carried out as a collateral activity of a biological research project and with a very voluntary vision. So we gather the specialists that were working in the project. So when you told me about your work I got very excited because I think your work can not only be left in the theoretical sphere but the findings can be applied to make projects like these to work in practice. The challenge is big and they are used to the government paying for their stuff, it happens every year we go, they ask for our money to pay for the maintenance of the museum, etc. Also the committee changes every year and some are more corrupt than others. I think that all the vices and bad practices we have in this country and in the world are reflected in this small Ch'ol community. We cannot idealize them. There are more virtuous communities that have generated a bigger, better conscience and it would be very nice to work with them in the future, with a more independent, more conscious community. In this case we had the challenge of working with a community that is particularly foul and corrupted due to all the factors I said at the beginning. So the challenge is there and the balance at the end is the work of people like you. The balance of the positive of negative impact it has had. In tourism terms well it is obvious that it has become a plus in their tourist activities. The potential is amazing, and you can see the lack of responsibility of the government. In reality these institutions can give a lot of benefits, mixing both an academic component and the traditional knowledge, respecting some traditions that are forgotten, also even by themselves, due to all this process of recent colonization. So this is the history of the museum, I don't know if you have other more concrete questions.

AL: Yes, well I have the knowledge that the community had a museum before you arrived to the community, right?

EA: Yes, there was a museum, but only of archaeological pieces and there was practically nothing in this gallery. It was empty. There was a picture of a bird that is not even from the region and some much neglected plants. I can show you some pictures.

AL: So the idea of creating a gallery of biodiversity in that empty room came from you?

EA: Yes, totally.

AL: And that dialogue that you mentioned between the experts and the community, how did it take place? Specifically in the museographic script, in the gallery, how was this dialogue established?

EA: Well we established a conversation with the people that were forming the museum committee on which subject they were interested in, plants they use as food, medicinal plants, if they wanted to have specimens. For example the University made a commitment to leave a copy of all specimens to the community and all specimens have a note that acknowledges the work of the community. Some of the community members came here to the Institute of Biology to look at the collections, for them to see their importance. We were all working together. And this group of people participated in all the stages of the creation of the gallery, in some aspects of the design, in the decision of which handicrafts

to put on display, whether to put only Ch'ol handicrafts or also to include Tzotzil, Tzeltal and Lacandon handicrafts. They participated in the setting up of some specimens, in the workshops along with the kids of the community and the researchers of the University, and there is a group of people that were very close to all the project and they were at the time the people that conformed, according to the community's decision, the museum committee.

AL: So the group of researchers mainly worked with certain groups within the community?

EA: Yes our first contact was with the assembly members, the person we were mostly in contact with was the president of the assembly. Then the people that we worked most extensively with were obviously the members of the museum committee, which changed every year. That's why it was so difficult. And well we also established some workshops with children and this group of the museum committee.

AL: And what happened with the specimens that you promised you were going to leave in the community?

EA: At the end the necessary conditions for that were not reached, because frankly there was no place in the museum or in the community where the specimens were going to have the good conditions for their conservation. A dry and cold place is necessary and as you know that is very difficult in a tropical environment like Frontera Corozal. The costs were too high for us to set up a room with these characteristics.

AL: Ah all right. And well have you seen a change in terms of the social dynamics of the community?

EA: Well, in the community they didn't have much idea of... Well we participated in many assemblies, in many. Sometimes they let us collect the plants and then they threatened us to return the specimens, because they thought it was something very valuable, or we would end up in jail. They threatened us with jail several times. We participated in many assemblies. We built a biological station as well, we did it to have a place where biologists from other places could come and continue the study of this area. Now this station is used for other activities completely.

AL: Yes, I think it is a high school.

EA: Yes, exactly. So well at the end it had a positive impact because it is used for educational purposes, but they did not follow the agreements that we set up with them. They did not respect our agreements, however, despite of all the work that we have done with them along the years, well if you talk now with almost anyone everybody knows what the *Lacandonia schismatica* is. A lot of people, we have to make a proper census, visited the museum, because we made a campaign to make them come. I think there was a positive impact in terms of creation of knowledge and environmental awareness, however we cannot change their institutions, a museum can't do that. A complete reform of the institutions is needed in these types of communities, and this involves a massive work of citizen's networks that would include them as well. Hard work and a lot of presence is needed. Inside the community there are many virtuous people, honest, that have participated actively, sometimes with power, sometimes not. So in terms of the impact I have no numbers but I think that the museum has had a positive influence regarding the knowledge around the *Lacandonia schismatica* and its importance in terms of the plant itself and in the conservation discourse as well. We made several videos and we screened them, which must have had an impact, we made several workshops and competition with

kids. To be able to maintain this and to have a stronger impact implies programs that are bigger than the effort of a small group of people like us.

AL: And has this project generated other ones? Have you seen that thanks to the experience of the museum other projects have been made?

EA: They have secured some funding, for example, for the maintenance of the restaurant. But as far as I know they have not generated another project directly involved with the museum, like to secure funding for the maintenance of the botanical garden. Next time I go I plan to tell them that. Given that this is not a private initiative well... you see for example the Escudo Jaguar and the other hotel that are private have been evolving, but this one is public and they have not generated more projects associated with it. Also they haven't continued with the programs we tried to establish, the science education workshops that we encouraged. It was one of the things we were doing. The kids from the secondary school across the road were involved, we gave some talks there. How much of this has been maintained I don't know exactly, but I think very little. For example there is no knowledge of how much people know of what is inside their own museum.

AL: And well, how do you see the state of these initiatives of informal science education or informal transference of knowledge between the public and the experts in Mexico?

EA: I think that there are many good examples, that are virtuous because they have many factors that fit well, like small communities with a previous conscience or with previous institutional work, and a very valuable work of the people that are going through this process with them, NGOs and other institutions. I don't have a recount right now. For example in the UCCS we are carrying out a monitoring work of successful initiatives of sustainable development, which have generally involved a previous stage of knowledge transference. In general there is not an agreed initiative. I think this is a strong debt that the UNAM has with the general public. I think that the University should have a much more proactive capacity via these kinds of project. I think there is a tendency in which the scientific knowledge is being directed more towards big companies and enterprises and is not being directed towards civil society and the environmental needs. So I think that there is a big debt there, and more than that I think it is an ethical treason, I think the UNAM has the responsibility to make these kind of projects in a more institutionalized way. Because this voluntary work of some researchers, like Alfonso Valiente, like my lab group and other ones, are not enough and we face many restrictions and obstacles. And well the participation of the government is even worse; they create projects without any previous research. They make some ecotourism initiatives without any background research of the effect and impact of their actions, and at the end this promotes disruption and corruption of local institutions.

AL: That was my next question. What do you think it's different about this project, or projects of this type and the governmental projects of development and conservation?

EA: Well in all those projects you can see the impact of the corruption of some governmental institutions. They want to get some economic benefit of the ecotourism developments and they do them without any research, they do them in a complete lack of knowledge, simulations, surveys and future scenarios both in terms of the biodiversity and the conservation of non-renewable resources and the disruption of social and cultural dynamics. They are fuelled by corporative imperialist aspirations and it is producing an immense environmental crisis. That is a very big difference; to start with we have a completely different vision. In this dialogue with traditional knowledge, scientific knowledge is the guide to look for a better understanding and a bigger value of the

resources, not in economical terms only, but in terms of a broader and more abstract way of valuing our resources and the biodiversity in general.

AL: Do you think that these science communication initiatives, more specifically the community museums that touch scientific aspects can work in many different scenarios?

EA: That is a very difficult question. I think they can work as long as there is a way to establish a profound dialogue, a real communication exercise. This is a very difficult change, because we have to have a much more deep respect for and knowledge of the way of life and also a better capacity of integration of the traditional knowledge and practices. There is the work of the indigenous universities that are promoting a multicultural education and that is very valuable. But it is a very big challenge because us scientists have to be more open to learn and to really understand these other forms of knowledge. But well talking about this Ch'ol community of Frontera Corozal, they have a deep amnesia, break up, disruption with their culture, and this is due to the way that they have been manipulated and broken apart. So they have to rescue themselves and rescue their traditions. So I think that as long as this profound dialogue can be established, where the discourse can be updated due to the exchange of knowledge. Because it is important to respect their traditional ways but also change the ones that are unequal and are been inherited from the colonial times or from the pre-Hispanic times even, like the unequal gender positions, the chiefdoms. Formal science can have a virtuous dialogue with this traditional science only if there is a mutual respect and if it is used for the social benefit in terms of conservation and sustainability and not as a tool for the enrichment of private enterprises.

AL: Ok, well I think that's it. Thank you very much for your time.

EA: Ok Ana, no problem. Thanks to you.

Interviewee	Place	Date
Esteban Martinez	Mexico City	7th December 2009

AL: Hello Esteban. Maybe you can begin by telling your profession?

EM: I am a biologist, I specialize in plant biology and I am in charge of the plant collections of the Institute of Biology of the UNAM.

AL: How long have you been working in the community or in the lands that belong to the community of Frontera Corozal?

EM: Look I started to work with them in 1984. The crossing of Frontera Corozal was the last place that had access all year round. At that time it was the last place to go further south to the jungle, the point where you could go in and out of Palenque all year round, although it was an 8 hours trip. This was the most southern point, further there was only a earth road that flooded during the rainy season and it was impossible to transit, and also in the other road towards Frontera Corozal, where now is the bridge of Arroyo Agua Azul it used to overflow in the rainy season and it was about two or two and a half km of water so you could not pass, only with boats people could go in and out the community. So, it was in 1984 that I decide to put my camp in the crossing, I asked for permission to the community and they let me. My assistant lived there and stayed there until 1987 when he moved to Nuevo Guerrero. When I start to work the representative was Mr Mateo, which was the same guy in charge when Elena's project, the museum, started. They call him Mateo Guero (Blond Mateo) but I don't remember his last name. In this time this guy accepted and authorized the setting of the cabin where all the equipment was going to be. When we started with Elena's project the negotiations were also with him and he also accepted. I tell you there are some people that are very willing to collaborate in conservation efforts, to my understanding this is without personal interests, and there are also people that are reluctant to accept conservation efforts, their vision is totally practical and they think that livestock farming is the only option, especially the group that we just went to meet.

AL: The Arcos family right?

EM: The Arcos family is very big and powerful and they have always had much influence, they have a totally livestock farming vision. So well, the separation of territories, before all these were all Lacandon territories, all communal and there were three nucleus, created in 1981, when they decided to concentrate the population. And the government decided to place the Ch'ol in this place called Frontera Echeverria, that was the initial name of the town, after President Echeverria left the presidency and faced charges of repression the population decided to change the name to Frontera Corozal. Also Nueva Palestina, whose official name was Velasco Suarez, that was a governor of the state. He was a neurologist, a very good one, born in Chiapas but was working in Mexico City. When he was a governor he was not really good, he didn't have much idea of how to run a government and he had a very commercial view, as many politicians. So, the Tzeltal protested saying that he was a corrupted politician and they changed the name of the town to Nueva Palestina, but it was originally Nuevo Velasco Suarez.

I went there in 1982 for the first time, when Miguel Angel Soto and Jorge Meave were working here, it was at that time that the government decided to concentrate people in the villages of Frontera Echeverria and Velasco Suarez, without caring if they were indigenous of this ethnic group or the other or not indigenous, they relocated everyone in the region. They did not consult them or try to negotiate with them. At that time there was an office called the Front of Colonization, that stated that you should mark your territory, cut and

burn the vegetation and then you owned the land and could do whatever with it. Then, if you remember, all the land from Nuevo Guerrero to Lacanja Chansayab are fields for pasture. They are product of that time and the detonator was a big fire in 1981, all the mountains of the Sierra la Cojolita around this area burned completely. Then the government decided to concentrate people to have a more rational and concentrated use of resources.

Originally they were not only indigenous, they were people of all kinds, I'm talking about the concentration time, because the Ch'ol were there before, they arrived from Tila y Tumbala mainly, the mountains of northern Chiapas, they were brought here. So, in the time of concentration you could go to the offices of the Agrarian Reform to request lands and they put you on the list. So there were people from all the country. In fact, in Marques de Comillas there is a Nuevo Chihuahua, Nuevo Coahuila. Well, actually Nuevo Coahuila is in Campeche. But these names are like that because they were founded by people from all those places. It was crazy. Then what happened in former Lacandon territories was a process of colonization. Also at that time there was an "unused land law" that stated that if a land was unused by human whoever could take possession and after some paper works you could own that land. Crazy right? Imagine, a national law for deforestation!

AL: Right.

EM: So deforestation was the law, the government led massive deforestation campaigns, like what happened in the Papaloapan River Basin, in Plan Chontalpa, in Uxmalapa, in Balacantun. National deforestation campaigns to give ready-to-use lands to farmers. Also because there were many precious woods, cedar and mahogany, so the federal government and the local authorities as well carried out the deforestation campaigns and sold the wood, millions of cubic metres each year. It is not clear where all those resources went to, like what's happening now with the petrol resources, at that time it was the same with the precious woods.

So at that time it was allowed that anyone came and took possession of the land. That happened to the land between the Sierra Cojolita and Yaxchilan. Those are supposedly the lands of the Lacandon communities, but there are property documents dating from 1940 that state that they are private properties, twenty properties of a thousand hectares each. Way before the lands were given to the Lacandon communities. So now the land planning is being made and the government gave compensation to the Lacandon communities due to this misunderstanding. So for me this is not solving any problem and the government is just perverting, corrupting the community members. If you see they all have cars and everything now and there is a lot of cattle everywhere, something we haven't seen before in the history of the community. We have never seen so many cattle there.

AL: Yes.

EM: Always, especially the Ch'ol community, had the plan of rising live stock only. That's why I was telling you about the population nucleus, because at that time they could not get out of there, they could only work close to those places. And then little by little they started, you see, when I arrived there were only people, mainly Ch'ol, in Frontera Corozal and Lacantun and San Javier. Then this entire zone has been colonized with houses, which was not the idea behind making the population nucleus. The idea was to create those nucleus and that way it was much easier to provide them with services, rather than try to provide services to 60 km of irregular settlements.

Then in 1989 they decided to divide themselves, so if you see, coming from San Javier to Frontera, there is a place call Encaño, the zone of the curves. They decided that from that point the upper part of the Sierra La Cojolita, up in the mountains, that was land of the Lacandon, and the flat part, the plant that is suitable for cattle farming, the land that is

very flat and easy to deforest, those are the lands that the Ch'ol people claimed as their own. They have a totally cattle farming oriented mentality. After that the Tzeltal occupied the land between the Zocotal lagoon to the Carranza lagoon and up to where the crossing is, where the military checkpoint is. Given the consanguinity problem of the Lacandon people their population growth is slow, they must be 1.500 now and in that time they were 500. The Chol people went from 3.000 to 10.000 or 15.000. And the Tzeltal went from 4.000 to 20.000. Then obviously the pressure of the population on the resources is tremendous, resources are needed. Another policy that I see now is to displace the young people, the only people that have a right to the land and to take decisions in the community are the initial men of the community (community member). All the sons are displaced. That is very common in the communities in Mexico. That is why many young people get out of the communities and work in something else. Within the community there is a lot of nonconformity of the young people that own a piece of land of the father but don't have a saying in the matters of the community.

AL: And they don't inherit the position of the father in the assembly?

EM: Only one inherits it, when the father dies, the first son inherits the position in the assembly and the others don't get anything.

AL: And can new community members be added to the assembly?

EM: Yes it is possible, what happens is that, to my understanding these are much closed communities that have not allowed it. For example, I saw that in Ixtlan, in the north of Oaxaca, where the young people, after a process of consultation with the community can become community members. So you have young men of thirty or thirty-five that are community members. Obviously they have to make a big service to the community.

AL: OK.

EM: And well this doesn't happen here. I have seen this in Ixtlan, in Santa Catarina Ixtepeji, and in other communities of the north of Oaxaca, so I think it is possible, legally it is possible but people here do not allow it. And in fact it is terrible that they don't allow it. I have worked in many parts of the country and I have seen other communities in which the community members do not accept new ones and obviously when they start to die the community members are less and less and that means there are less and less people in the assemblies. They decide everything and the rest of the community is not happy.

AL: Well of course, since it is no longer a democratic system.

EM: Yes, the community is not deciding anymore. And that is a problem in many communities in the country that have communal properties and decide everything in assemblies. However the system can also have benefits, in theory, since everything is decided by them and with no personal interests involved, just the interest of the community. I think this system has helped the conservation of the area as well and it has helped the survival of the museum. Maybe not all the members of the community are interested in the museum or in conserving the rainforest that is in their lands but if for a small majority it is then the projects guarantee their survival. Well I think that now, only for some people the conservationist flag is legitimate. To my surprise the museum is very well conserved. I was being super negative and I thought that everyone was going to take their part and take it home and that the museum was going to be left empty, but no, and I'm glad it is there still. It seems that there are people that are interested and they still have it in very good condition. That is really admirable. But still my vision is that they are opportunists and they don't mean they discourse. In my opinion the museum is the

initiative of Elena (Alvarez Buylla) and Elena thinks that it is possible, that the communities can get organized and that initiatives like this do work. I believe that it depends on the community, it depends on their education level and the interests of people. Then as I told you before, I think that all this territory, or at least the part of the Ch'ol people is going to suffer an intense deforestation, more than what we are seeing, and Alma's data apparently confirms this. This is the story, the tendency and it is going to be like that until only a few remaining spots of rainforest are left. The whole thing of a communal reserve is for me, a farce. I'm talking in particular of the case of the Lacandon jungle. The communal reserve that belongs to the Ch'ol community

AL: The one we visited?

EM: Yes. And well we are calling these lands reserves but in reality it is not only virgin lands, they have a degree of degradation. To my view these are lands that are of no use for them, in terms of agriculture and cattle farming because they are terrains full of rocks. So they saw these are areas with no potential for exploitation. That is why they kept them untouched. To me they have a very primitive mentality, they burn the forest they have one or two years of agricultural activity and after they use the land to raise cattle. So I think that in the case of the Ch'ol the concern with conservation is only part of the discourse that they tell outsiders, it is not really an interest for them. Most of the people of the community do not see how conservation of their lands can be of any benefit for them. And well the project of the museum was to try to make them think differently. To make them see that conservation is important and can represent economic benefit. Well what I know is the case of the Ch'ol community. I have more experience working with them. I have worked in that community for the past 25 years, or maybe more.

AL: And how was the process with the museum? Where you involved since the beginning?

EM: No, in the beginning it seems that they found the steles and the INAH took them, you know that the INAH is territorial. So the INAH decides that things are federal property and that is final. But there was some opposition from the people of the community to the idea of the pieces going to Mexico City. There was some regionalism, good one, and they wanted to keep these pieces because they are their historical patrimony. And this has happened in many places of the country, Veracruz for example, in the Olmec zone. There is a very small museum there, like the size of half my office where the community keeps a beautiful sculpture called "the twins", with two figures and a jaguar. So there are many examples like that in the country of small museums of this kind.

So there was some pressure, also this was the time of the Zapatista uprising, hunger and a very deeply rooted discontent finished in that. So I think that in order to tone it down and to create a national and international image in which the government helps the indigenous communities they let them keep the stele and built them a museum. And they build a museum very fast, badly done. Then Elena started to work with them and she needed to collaborate with the community so that they let her work with the Lacandonia. So she was looking for a project that benefited the community and she came up with the museum idea, she invited me to work with her around the year 2000, or 2001. So we started to collaborate and we applied for funding to Conservation International and the project got approved but it was very dependant on the policies of Conservation International. So Elena submitted the proposal to Semarnat and Conacyt and the project was approved as well so we told the people from Conservation International that we were not going to collaborate with them any more and that we are not going to accept their resources and that we were going to keep working in the area but with funding of Semarnat and Conacyt. And so part of the proposal had to do with the biological research on the plant Lacandonia, regional flora and fauna inventories, in order to see the richness of the region. The other part was the development of the community. Then we built the biological station, in order

to keep our equipment there and to have a place to work, after we finished the work we left that building for the community to use as they pleased. That was one of the conditions of the community. That is how this community worked with us, imposing conditions. The work with the community was always very difficult, every time the authorities changed we had to start all over again. The new authorities never respected the agreements we reached with the old ones. So time and time again we had to go to the new authorities, the committee of the museum, the committee of the restaurant, to talk to them. It was a very difficult and weary process. Alma Delia, the architect was very involved in the project and she was the one in charge of the station, she was even living there in the community for a while to deal with the relations with the community people. Well at the end I think we did not use the station as much as we should have. After, when the project finished and we stopped using the station, the community took the building and we thought they were not going to put it to good use, but they did. Now there is a high school there and well I think it is the best use that they could have given to the building. Also, I was very surprised when I went to the opening of the museum, because it was really beautiful, very modern and innovative, very different to the first museum that the community had. Obviously is nothing big, because the project did not have much money. And well I thought that, after we left, the community to deal with the museum themselves, nothing was going to be left of the museum, that everyone was going to take a piece and go home, but no. It was very surprising to me to see that after the first year the museum was still working and in perfect condition. Only two or three details to sort out. After the second year there were more details to fix, but anyway it is admirable that, I don't know why, people are making it last. It is working. What I don't like about it, well what I don't see happening is that the community is not using the museum as they should with all the young people and the kids from the community. The schools don't use the museum, they don't see that it can contribute to their education, they don't use it. And I'm talking about the kids from the community, many don't know the museum. That is very sad.

AL: So when Elena came to you to ask your collaboration in the community museum, why did you agree? Why did you think it was worth to participate?

EM: Look, I think that... When I was working there I had a helper, Gabriel Aguilar, which was also working with Elena, he worked with me until his death. He was very skilled, he knew how to negotiate, he was our intermediary. Very effective even with this difficult group of people. I tell you, Jorge Soberón, who was a researcher at the Institute of Ecology and after he was working at CONABIO, always told me "that group of people is very hard to work with, only you can make it, you managed to work with them for so many years in the community" So I thought we still had much more to do. I think I still have to finish my inventory of the region. I think that there is still a lot of work within the region. So I saw this as an opportunity to finish the puzzle of the biological diversity of the area. Elena's project was very ambitious, it proposed to do the inventory of animals and plants and their density in the area. Obviously resources for these projects are always very limited and we proposed to do the entire inventory of plants of the region! (laughter) We had never done it before, because the access to the region had always been very difficult, in the rainy season, as I told you, the rivers overflow and access to the area was impossible for half a year. So we worked on that, we did the inventory in the next two years. We made a very thorough work. We carried out inventories of arachnids, spiders and scorpions and mites also. An inventory of butterflies was also made, by a scientist here at the Institute. The inventory of Arthropoda was the least comprehensive because we did not have an expert in the team. We did not make an inventory of mammals because it had been done before by a team of El Colegio de la Frontera Sur. People of the UNAM also carried out inventories of reptiles, amphibians, birds and mammals of the area of Yaxchilán. So because there were very good inventories already in existence we did not dedicate our time to that. Also our resources were limited. So one part of the project was the

inventories and the molecular biology of *Lacandonia schismatica* and its relatives and the other part was the community development project, which used most of our resources. The community development project referred precisely to the realization of the biodiversity gallery of the museum and the building of the biology station that is now transformed in the high school of the community. Ah and also the botanical garden. I think that most of the resources were destined to the community development project. I saw it as an opportunity of increasing the biodiversity knowledge of the region, which was inaccessible, both due to the poor roads, but also due to the difficulties that working with the Ch'ol community represent.

AL: And you, what were you doing specifically in the part of the project that involved the renovation of the museum?

EM: Well I, together with Elena, was one of the people involved in making the proposal to Conacyt and the SEP. So I had to train the people of the community that were going to come with us to the collections and also we had to find specialists here at the University that wanted to collaborate with us there. For example here the director of this Institute of Biology sent her students and associate researchers to help us with the Arachnid collection. So I was in charge of coordinating that kind of job, to negotiate and to find a way to carry out the project. And well when things with the community were getting too tense then Elena Alvarez Buylla was the one in charge of the negotiations. And there were many times when we were very close to cancelling the whole thing because negotiations with the community were very difficult. The change of authorities for example is very hard to deal with. Everytime they change authorities we had to start meetings from zero and that was very hard and time consuming. They did not want to let us carry out research in their lands without seeing a benefit, mostly in economical terms.

(Interruption)

EM: What was I saying? About my participation right?

AL: Yes, exactly.

EM: Well I also coordinated the work with the inventories, both of plants and animals. I had to see that the teams that were doing the job had everything they needed and that they always had permission of the community to carry out research in their lands. And so after the collection process was finished I worked with a technician preparing the specimens for the inventory and we came here to store it. At the beginning part of the project was to leave the specimens of the collection to the community because it is the inventory of plants and animals of their lands and they could make good use of them. It is a representation of their natural patrimony. However, there are no conditions in the community to conserve well the specimens there. For the good conservation of the specimens you need a room at less than 60% humidity and under 18°C and there is no place in Frontera Corozal that has those characteristics. So the collections are still here at the University.

AL: And have you seen that the museum has had any influence in promoting a change in the community, that there has been any change in social dynamics since the start of the museum?

EM: Yes I think so. I wouldn't know how to evaluate it, which methodology to use, but I think there has been a change of vision in the community people that see that we have provided them with tools to evaluate their biological richness. More people are aware now that they are the ones in charge of taking care of a unique richness and well I have seen

many people express their approval to this project stating that before this they did not know about all the plants and animals that inhabit their lands. Even people with political influences in the community. For example the leader of the group of men that have boats to take tourists to the Mayan ruins asked us to make an evaluation of the flora around the ruins of Yaxchilán to teach them what they had there. This way they can give better informed tours to tourists. Like that they can enrich the knowledge they already have of their lands. For example they are very good at knowing which plant is used for what but they do not know the scientific name, and we have thought them that. So yes they asked us to do the touristic route to Yaxchilán with them to make a note of the plants that are there and make a quick inventory. They always have tourism in their minds. After they enriched this knowledge with their traditional knowledge of the use of the plants. So yes I think it has been beneficial, it has helped them to value or revalue the biological knowledge and the richness of their lands.

AL: And well in terms of conservation of the environment do you think that this project has helped to raise awareness within the population?

EM: Yes I think so. The problem I see here is that the few people that have gained more environmental awareness do not have the capacity or the possibility to make decisions or to influence the decision making process. So until people in the committees or in the power groups of the community start to have this vision in which the conservation of the environment is important then things will start to happen. So I think our work has influenced some people and has raised awareness on the importance of conservation of resources in the community, however I think it has not reached many people and mostly it has not reached the important people or has not made its way in the decision making process of the community.

AL: And in terms of the generation of other projects, has the museum worked as an catalyst of other type of projects in the community?

EM: Well the only initiative I have seen is what I was telling you of the group of men that have boats and take tourists to the Mayan ruins. They wanted to take tourists to their lands and make guided tours of the jungle. Also, there was a group of young guys from there that came to us to ask for training so they could be tourist guides in the jungle. However that project never carried on because of lack of understanding between us and the community, and bad timings. Again the issues of governance that the community has did not help in our relationship with them. Although it has to be said that things are getting better and there is now apparently more continuity in the project. The first museum committees were not interested at all in the museum or at improving it and bringing it to life. However these last few years people seem more interested and projects are being carried out, the expansion of the museum restaurant for example.

AL: How was the process of working with the community? Apart from all the tensions and difficulties that you mentioned regarding the biological work, how was it for the development of the gallery? Did you collaborate closely with the community? Did they have an opinion in the creation of the gallery?

EM: Well I think that we did involve them and we asked their opinion in many things. The museologists made proposals and they said if they like them or not. Most of the time they agree to what the museologists proposed. But look, we could not involve them more because they don't have this kind of knowledge. They don't know how to make a museum. Even I wouldn't know how to design a gallery. So we involved them to the extent that we

were convinced they could help. The museologists did their work and we as biologists did all the information and the community were only asked for approval.

AL: And do you think the community has appropriated the project?

EM: Yes I think so. And well you see that people that are interested stick around the project. For example the person that is president of the museum committee now...

AL: Yes, Mr Sebastián.

AM: Ah yes Sebastian, well he was involved in the first museum committee and was involved in the creation of the museum. So yes I think the community has appropriated the museum. At some point in the project the teenagers from the high school that is across the road to the museum came to help with the collections. They used to have a teacher that was very interested in the potential that the museum could have in their students so he was bringing them regularly here. Now that teacher is gone, there is a new one and there is no continuity in the projects.

AL: In general terms, which is the value that these kind of community initiatives have in the conservation of the environment?

EM: Well I think this is the only way to do environmental awareness, working with the community. To me the most important groups in which these initiatives have to have influence upon are women and kids. Because women are the ones directing the family and children are the future. So if kids grow with these ideas in their heads, then the conservation of the environment will be an easier goal to achieve. So I think that despite all the disappointments we have to keep insisting and working towards this goal. It is very satisfactory, when you see young people being more conscious of their environment. They know the resources are not endless, that some species are vanishing, that the climate is being drastically changed, that the water is polluted. Even in these communities far away, people cannot drink the water from the river any more because it is full of contaminants. So what I believe is that we should be directing these projects to children and teenagers, because it is them that need to believe in the importance of these projects, so that they are still going in the future. If we make them involved we are guaranteeing the continuity of the project.

AL: Well I think that is all, thank you very much.

EM: No problem. It has been nice talking to you.

Interviewee	Place	Date
Alma Delia de los Rios	Frontera Corozal, Chiapas	03 November 2009

AL: Hello Alma, well I would like you to begin by telling me your profession.

AD: I have a bachelor degree in landscape architecture and now I am doing a master's degree in land use planning. I am a teacher at the Faculty of Architecture of the National University, here in the city.

AL: So I wanted you to tell me about, well, your dissertation's subject is somehow related to the museum right?

AD: Yes my dissertation, well the postgraduate program I'm in is in land use planning in the Geography Institute here at UNAM. The subject I've been working on is the landscape fragmentation in the territory of the Ch'ol community in the Lacandon Jungle.

AL: How did you collaborate with the museum? How did you start working with them?

AD: Well Dr. Elena Alvarez asked me to work with her in the design of the botanical garden, initially. Afterwards, I started to collaborate in other activities, operational issues of the Project. The work in the museum initially involved the management proposal of the whole museum not only the botanical garden. A master plan was elaborated and from there the plan for the garden, the kitchen and the biological station, in another piece of land, arose.

AL: Why were you interested in working in this project?

AD: Well I was invited by Elena, in fact, she called many landscape architects and she decided who was suitable to carry out the garden design. I was the lucky one that was chosen to do the job.

AL: How was your contact with the community? How was the interaction of the people that worked in the museum with the community?

AD: Well I can tell you that at the beginning, when I started to work in building the station and the botanical garden, it was difficult because it was a community closed to women participation. So they saw me as a young woman and they did not allow me to tell or suggest them what to do in the community. I had the good luck to be able to get close to people that work in the field with Esteban Martínez and Mister Adolfo and some of them helped me to make the architectural surveys of both sites where both projects were going to be built. Once they notice you are working for their community well they start to allow you access and start to comment on certain problems and necessities that they think they have. Afterwards when I started the operative and management work, with the support of Valentina Estrada, she told me how the community worked and I started to learn the easiest way to approach them. Specifically with the people of the museum well the most important thing is to work with them, you can't arrive and tell them what to do, you have to work with them and with that I mean go to the kitchen and serve the costumers and talk to the tourists and do the measurements of the vegetation and the terrain with them.

AL: So you are telling me that the participation of the community in the establishment of the museum was very engaged, it was not a situation where you told them what to do and they did the work?

AD: No, everything was very engaged. There was a lot of stuff that we prepared in meetings with a certain working group of professionals in Mexico City. There, we decided what activity to carry out first or what work to do, but we were also working with them all the time. We had sessions and we said well next time we go to the community we have to do this and that, and so we arrived with a structured work plan, but we still made decisions there. So maybe we changed our minds in what kind of work to do in terms of what was happening at the community that might interfere with what we had planned, especially when we had things like workshops with the children or arachnology workshops or workshops with us, like when we did a painting workshop. So we prepared many things in advance and we had a general notion of what we wanted to do, but many things were decided and solved with the people that were involved working in the museum at the time.

AL: And so apart from those workshops, did you have any more activities as part of the museum?

AD: Well I now remember two that were very successful, the first one was done by the arachnology group of the Institute of Biology, they selected a group of children in primary school, evidently we could not include all primary school children because we did not have the capacity to carry out such a big workshop, we didn't even had a space, and so they showed these kids the work that the biologists were making in the community, the way they collect specimens in the field, what they do with the spiders, where and how do they store them, how do they study and classify them. Then the same work that the biologists do was done with the kids of the community. So they took them from the museum to the field, they collected the spiders and put them in jars and the biologists explain them which spiders they had and why were they important for the zone and what they biological importance was. And they also participated in creating some posters that the biologists presented later at a conference. That was one of the workshops, the other was in several stages, one was a contest between primary school children to collect rubbish in the community. This is a community where people throw rubbish in the streets. So the group that managed to collect more rubbish won a prize in the museum, part of that prize was to participate in a painting contest, the subject was the jungle with and without rubbish. In this contest children painted how they see the jungle and the community now and what they would like to change. They used elements of nature and of the products they use, for example, from the package of Fritos (crisps) they cut the corn that is on the packaging and put it on the drawings to represent the corn fields. Or the snake or the spider and they put it in their drawings. Six or eight children were the winners and they won a cultural visit to Mexico City, they visited the university, the biological collections, the historical centre of the city, among other places, this was to in some way have an academic collaboration with the children, somehow.

AL: According to you, which was the objective of these workshops and what is their relationship with the museum?

AD: In a way to promote that the children of these community have a broader perspective on things, to value the important, in this case I see it as a landscaper, of the landscape in which they live, of the environment in which they live. Also, that this not only remains as a one day activity but encourages children to invite other children and even their parents, maybe. Almost all activities related to conservation end up only in drawings and in practice nothing is done. For example the rubbish collection activity was something that motivated not only the children, but also the parents and the people of the museum also collaborated in the activity.

AL: Given that you collaborated with the museum and also that you were involved with the project for such a long time, I guess you must think that it is a worthwhile project, which has certain importance. So which are the value and importance of these types of projects?

AD: Well first of all, all the people that collaborated in this project of *Lacandonia schismatica* had a very integrative vision, we were interested in coming and working with the people and in doing something for the community and not only do research and work with our working groups. One of the main objectives was to leave something of our work here in the community. Another important thing was to create the opportunity to talk to the people, to find out their problems, we wanted to know from their family and community perspective how we could help them. Also we wanted to show them that they have open doors at the university and that we want to keep on supporting them in projects they want to carry out, under several announcements of several institutions.

AL: Ok but in specific, this approach to the community of creating a museum is clearly different than establishing other type of projects, like for example a cultural centre or another institution. So, for you what is the value that a museum has? What is the value of having these type of projects in the communities?

AD: First of all this is a source of income for the people here, it is also an enhancer of culture and academic life for the people here. So in a way, in specific this community has tourist activity so one of the main incomes of the community is the flow of tourism, it is also a window where people from outside can see what there is in Mexico. In this case is the Lacandon Jungle, which is rich in every sense, cultural, environmental, in terms of landscape. So this project is like a window that allows them to see a piece of what is in this great region. So this museum is a small taste of what there is in the jungle.

AL: Do you think that this museum, I mean, can you tell me if you have noticed a difference in the social dynamics in the community since the museum started? I know that you were not there before the creation of the museum, but did people tell you stories or did you notice any change since you started?

AD: Yes. When we first arrived to work in the community and in the first years of the museum, people told us that before the museum was only an institution for the tourists, they entered the restaurant sometimes to buy a coke, crisps, cigarettes, but nothing more, or because they worked there, but no one else entered the museum. When we started to make activities and refurbished the galleries we started to catch people's attention, they started to come to the museum and they found out about what was going on here. The opening day (of the new gallery) was a key point in this. We made an invitation to the whole community to visit the garden and the new gallery, to take part, because all the photos and all that is there is communal material, that themselves, in some cases, collected. So in a way it was an attempt to make them take appropriation of the space, to make them proud of what we are showing here because all visitors are going to see it.

AL: Do you think that the appropriation of the museum was successful? Now that you stopped working there, that the project is over and you don't work with them in the same way anymore.

AD: I think it is a process in the way to success. In its moment, like all new toys, did caught the attention and everything, but I think there has to be a continuity process and I believe this project is the path to success. Now the community has changed some positions, for

example, women do participate in the committees, teachers take the children to the museum and then the project is on the right path.

AL: How many years were you involved in the project of the museum?

AD: I worked three years and a half in the project with the community.

AL: And well the activities you had to do were very varied right?

AD: Yes, as I was telling you the activities I did were mostly operational, so I was working both with the museum and the biology station, the collections, the issues with the reserve.

AL: You told me a bit about that, about the role that the museum has had in the community, but have you seen during these three years and a half that the museum has been a generator of other activities in the community?

AD: Very little, very little really.

AL: So, other projects were not carried out?

AD: No, I remember that there were other organizations with other projects, NGOs for example that come and work with the community, but not with the museum. They come and work with specific groups in the community. The group that is involved in the museum is a bit stronger now than when we started the research project. And well, as I was telling you it is in the path of growing and becoming a stronger group within the community.

AL: But, the fact that the museum is there, did it not make them notice that the museum was something important that was attracting more tourists, more money, more of all that?

AD: No. I believe that the community is very divided. There are several groups that are dedicated to tourism, for example, the vans, the hotels, where Alianza and Escudo Jaguar are the stronger. And even so within them they are divided, so there is no project with a community vision. It is very divided. And the museum is an institution that is taken care of by the people that are chosen to be in charge each year. And this person does or doesn't do the work well depending on his interests and on the work group. Each year the committee changes and there is no long-term vision.

AL: Well and also there is the question that I guess appropriation of the project has occurred at another level. Do you believe this initiative has helped them increase their life quality in some way?

AD: Yes, although not for everyone. People that have worked at the museum, people that received the training, people that have been curious enough to come close to the museum, well for them yes, this has been a grain of sand. But, as I told you before there is no community vision.

AL: So in terms of environmental education, do you know if the children of the community have some activity in the museum?

AD: It was planned and when the teachers found out about the remodelling they programmed visits. But I don't know to what extent this promise has been fulfilled.

AL: Taking this museum as an example, but speaking generally, do you think community museums have any influence in the conservation of the environment?

AD: Yes. Many of the problems of conservation come because we understand only a part of the cycle, so we don't really make conservation. When you start noticing that these projects are a sample of all the components of the system I believe you can teach people how to keep making use of their resources, how to keep working the fields, how to keep somehow populating an area, but taking into account the cycles and the whole system in which they live in, because they are part of that same system.

AL: And the cultural and historical patrimony, do you think the museum has an influence on their conservation?

AD: Yes. In this specific case of Frontera Corozal when the museum was made it was important for us to rescue some of the works that Ch'ol people did here, like basketry, clay modelling and traditional embroidery. The only place where those works are being shown is the museum, people don't use it anymore. When we were designing the waitresses' and other workers' uniforms we wanted to rescue some elements of Ch'ol embroidery. Then it became a bit fashionable again, so to speak, but previously people did not know about these works. Old people from the community remember they existed but if it was not a part of the patrimony displayed in the museum it would have been lost forever.

AL: So in terms of the conservation of the environment, how do you think the success of projects like these could be measured? Because for you and for me it is clear that it has some influence in conservation but the point is how to measure it.

AD: I believe this is a long term result, generations of people that now have worked in the museum's construction, in setting up the Mayan pillars, in the biological collections, the kids that participated in the workshops, somehow you would expect them to have a reflection in society in the future. Maybe it is too hard to change adults. So I think it is a long-term project that has to be accompanied with many other actions.

AL: Ok well to finish this interview I would like you to tell me what is the value that these museums have at the local and national level?

AD: I think that a very, very important value of these museums is that the community has an appropriation of the museum, both in the operation of it and in the first idea of having a museum in the community to show whatever they have in the community. This is a way to value what they have and the fact that the management of these places is on the people well it does influence the economic growth of the places. Somehow this is a grain of sand in the economy of the communities. And the other one is that this is a projection of all those places we have in Mexico, we have very beautiful, interesting places with a big cultural and biological value. And well we probably cannot measure that, because it is at a national level. Somehow the important value is the people's participation, these projects have lots more value with their participation than if we isolate them from us.

AL: Ok, we have finished, thank you.

AD: No problem.

Interviewee	Place	Date
Dr Fernanda Figueroa	Mexico City	14 th November 2011

AL: Good Morning Fernanda, I would like you to tell me your profession?

FF: I am a biologist and my PhD studies are centred around issues of socioeconomic context and conservation in natural reserves in Mexico.

AL: So tell me about your work with the community of Frontera Corozal, how did you become involved in working with them?

FF: I am in a project that funded by the university that works with the three communities of this part of the Lacandon Jungle, which are Lacanja Chansayab, Frontera Corozal and Nueva Palestina. This project tries to find out the perceptions that these communities have on conservation, on the jungle and the relation that they have with environmental agencies.

AL: Ah ok, so how do you carry out your research?

FF: Yes, well I go and interview people from the communities and I make the analysis of the discourse, both of the community people and the representatives of the agencies.

AL: Ok and in the case of Frontera Corozal have you found something interesting? Do you have any results?

FF: We haven't reached the stage of analysis of the interviews, we just finished our field experience, so well the formal analysis is not yet made, but I do have a certain idea of what we found out. So in Frontera Corozal there is a, well the community life surrounds around tourism, it is the most important activity, there are a lot of conflicts and competence for tourism related activities and there is a social stratification based on the access people have to the economic benefits of this activity. Well talking about their perceptions about conservation well there is a lot of variety but it has a lot to do with the economic opportunities that it represents for them, but at the same time it is seen as a limitation for their economic activities, because the majority still have their lands and livestock.

AL: And they don't have, in your opinion the notion of this is my patrimony we have to take care of it?

FF: No, but this has to do with how these communities have been formed, how the decree of the reserve was made. You know that they were relocated in the 70s. So their historical process does not give much space to patrimony issues. Yes if you compare them with other communities from the area like Nueva Palestina that has an even more difficult relationship with the jungle and the reserve. Still they do have this ambivalent discourse, in one side they say this is our jungle and they can tell you why it is important and all the resources they have from it, mixed with external discourses that they have incorporated, like the climate change and O2 production and things like that, but on the other side they also see the reserve as a limitation imposed by people from the government agencies. This vision also has roots in the relationship that these communities have had with the State through history. So, based on this relationship they think "what do I get if I conserve? They have to give me projects so that I can live on something." So this carries a series of contradictions in the discourses, but it has certain sense, in their daily lives it is an imposition and it limits them economically, but at the same time it provides opportunities. So it varies a lot, and well it depends on how their experiences have been, some people

have had many benefits and opportunities so they see conservation as something positive and others think the contrary.

AL: Of course. Well I know that the Ch'ol community was relocated as a consequence of the declaration of the reserve. Could you tell us briefly about this situation in the community?

FF: Yes, well it was after the reserve was declared. Before the reserve was created the government created the Lacandon communities, around 70 000 ha were given to the Lacandon people, only to 60 heads of family, so it represented a huge territory for each family. This affected many other communities that were living in the area from before. So when these communities opposed this reserve declaration the government proposed them the relocation of all these communities that were dispersed in the jungle to three population centres, Nueva Palestina for Tzeltal people, Frontera Corozal for Ch'ol people and another one that was never formed, that included all the other ethnic groups that resisted this initiative, that never accepted the relocation. The relocation was very badly done, badly stipulated. These communities continued to resist, formed the RIC (Red Indigena Continental) and other resistance movements. And well with all this background the reserve was decreed and established. So communities that have been living in the jungle for many, many years but where not from the Lacandon ethnic group became illegal in their own lands from one day to another. So, there hasn't been much resistance from the communities that are in the east of the Lacandon lands, due to this relationship they have had with the State. There is much more resistance from the other side (the west side). So those were the reasons of the relocation of these communities. That was in the mid 70s.

AL: Ok. I remember they have a commemorative plaque in the community that says it was founded in 1973.

FF: Yes, it was founded in 1973 but legally it was declared a sub-community of the Lacandon community in 1976.

AL: So they were coming from many different Ch'ol communities and they were relocated all together?

FF: Yes. If you see closely the community is divided in neighbourhoods and each one corresponds to the original community where they came from. They are all Ch'ol but they came from different communities, which obviously makes it harder for them to integrate.

AL: Ah, ok. So, you have never been involved in the museum right? But you have visited it right?

FF: Yes.

AL: So tell me what do you think about it?

FF: I went only recently so it is very important to note that my opinion is based on this last year. Maybe the project has changed a lot since it started to nowadays, I don't know that. But well the first impression of the museum is that it represents a vision from outside, it seems that there was not a dialog with the locals that allowed them to explain it through their local vision. Only the outside vision is represented. All the discourse of the biodiversity is a discourse that you could see in the newspapers, in books, or maybe even in museums, but museums created by academics. There is for example... one thing that caught my eye was a scheme of the potential that a multispecies crop could have, made by Victor Toledo, that also appears in some books. That made me realize that this was not coming from the people, it is a reinterpretation of their reality from outside. The same

happens with the cultural aspects of the museum, the traditional costumes etc. It follows the same line as the anthropological museums; it represents the vision of the academics or the museographers. The botanical garden was completely abandoned, dry. In terms of maintenance the museum was not dirty or neglected. Anyway that does not relate to the proposal, they are two different things. So I felt it was not neglected, people take care of it, there is a committee in charge of the museum. And in terms of the proposal itself I think a dialog and negotiation was lacking, where the visions were combined, or where we could see both visions. We cannot see, at any time, how the population sees biodiversity.

AL: And did the inhabitants of Frontera Corozal ever mention the museum to you in the interviews?

FF: Well I was not asking questions about it, but I remember that at times people mention it. They see it as a place where tourists can come and see or learn what they have in their community.

AL: And now that you have worked in the region and in the community. How do you see the involvement of the community with the museum?

FF: I have the understanding that it is only a group of people that are involved in the museum, not the whole community and those people want to improve it. In fact last time I was there they were making some refurbishments with CDI (National Commission for the development of Indigenous Groups) funding to expand the restaurant. So the museum is a tourist attraction that has the potential to give them economical benefits. Other than that I don't see the figure of the museum in the community. I think the museum is important for them but in terms of income, as a tourist attraction, it is a project that has not been appropriated by them.

AL: So you have not seen for example that the kids of the community are taken there or that people from the community visit?

FF: No. But there is something that can represent some pride for them, and it is this Mayan stele that they see as their own. A discussion is seen in the three communities as to who has the rights to these pieces, who is the cultural heir of the ancient Mayan that built the pyramids. The Lacandon people say they are the descendants, the Ch'ol say that they are the descendants and not the Lacandon, etc. So this is related to the question of who has the right to be in these lands. That is why the stele is an important symbol for them. Apart from that I didn't see much relationship of the community with the museum. I didn't see people from the community in the museum, which can be normal; I mean probably all of them know it already. But well I saw it as outside of their daily life activities.

AL: So according to your opinion, which is the value of the museum in terms of conservation of the patrimony?

FF: Conservation of which patrimony?

AL: Well both natural and cultural, tangible and intangible. Well in general terms what do you think is the value of the museum? Do you think it is important that they have a museum?

FF: Well maybe it is important that they have it in terms of the potential that it can have a process of appropriation and transformations were to happen. If this was a museum... well maybe through a process of dialog, or through a process of appropriation and transformation where the community created its own discourses and its own way to show

themselves to the world or to share who they are, what they think, how they see the jungle, how is their way of life, etc. So that is why I think it can be important, because it has a great potential. But if this process doesn't happen the museum will never be more than an income source and an information source but only for visitors, that can be very interesting but for tourists from outside. I think that the importance and relevance of the museum is given by the potential it can have. For that to happen there is the need of people from outside that are involved in the museum to come and establish these dialogues and to help them, in terms of technical support or consultancy, so that they have their own representation of their life. For example they could have a panel or scale model explaining how they plant their crops in the jungle, how the women cook, what do they use from the jungle and how. But all of this described by them. This also has the risk to become only a touristic product, but anyway... So this is how I see the museum now and the potential it can have.

AL: Ok and well in general terms, as part of your work is to do some research in these communities in the Lacandon Jungle have you seen any more communal initiatives of this type that touch subjects of conservation of the patrimony?

FF: Not communal initiatives. All the discourse on conservation issues comes from the government agencies, CONABIO, CONANP, etc. And there are some initiatives that mainly have to do with ecotourism. People are very concerned with getting benefits, to have economical income and the communication would have to have an objective related to create income. Otherwise I see it a bit difficult. And probably this contradictory vision of the jungle... Well one thing that is really important to say is that these people do have attachment to the territory, one thing is the discourse of the jungle's conservation and another one is the attachment to the territory. In that sense they do have a very impressive sense of appropriation. So maybe that is the way in for projects like that, but in my opinion if there is no link to income generation I see it very difficult. Also, the government is promoting tourism as the answer to poverty, the only way, so many people are betting on that. So no, I haven't seen any other communal initiatives.

AL: Your work is with the three communities, Frontera Corozal, Nueva Palestina y Lacanja Chansayab, and I don't know very well the situation of the other two communities but I assume they have different eco social problems.

FF: Yes, yes they are very different. But well coming back to the previous question in Lacanja there is something, not a museum as such, but there is an initiative of the community to make a sort of fairs to show what they have, it is linked to tourism obviously and they are looking for funding and it is their own idea and design. They want to make a sort of corridor where the landing strip was in which they want to show the local food, the relationship with the jungle and their way of life. They want to show everything related to that. It is a small group, the Lacandon people are organized in families, they don't have this concept of community and everything is organized in families. So several families are involved in this initiative and they want to do it every year. So that can be a similar project, it is not a museum but it is a communication exercise. But well the ultimate aim is to attract visitors. And to answer the second question yes they are very different in many aspects. In terms of the relation to conservation, in terms of how they relate to their environment, the way they produce their food. Nueva Palestina for example has no tourist attractions; it is a rather ugly place. They have super beautiful waterfalls but that's it and no one stops to see them, they have two or three ecotourism initiatives, but they are having many difficulties to attract tourism. Tourists come from Palenque and they go straight to Bonampak, not many stop on their way. Also they are many, many more, they tend to have more kids and the other two communities see them as predators of the jungle, because their methods are very expansive, they cut a lot of the forest to plant crops

and they have a lot of cattle. I think they are like three times more than the Lacandon and given that they have no more lands to split, the sons of community members have no lands and well the pressure on the jungle is huge. There are also lots of community member's sons that have no lands in Frontera Corozal but not as much. The capacity of collective organization is bigger in Frontera than in Nueva Palestina. Frontera Corozal has the advantages of ecotourism, there is an important development of successful tourism activities, there is a lot of competence and there are many people excluded from these benefits which cause social strata. But because they are less and they have this income options they put less pressure on the jungle resources. And well the Lacandon are a complete different story. They are very few and they have a completely different relationship with the jungle. They do not need to cut down the jungle, the ecotourism is more developed and almost everyone has access to its benefits and opportunities. If they cut down the jungle they do it at a minimum level. They don't have the problem of the sons without lands that are present in the other two communities. For them the declaration of the reserve was positive, it was a way in which the State helped them to protect their territories. So it was an option for them to keep their lands and their way of life as they wanted it, because the pressure on the western lands of the reserve is very high.

AL: Talking with Esteban Martínez, that has worked with the community of Frontera Corozal for 25 years, he was telling me that he feels the Ch'ol community does not really have a concern of the conservation of the environment, that it is only part of the discourse they tell outsiders. What do you think of that?

FF: Yes. But I think this ambivalent posture has to do with the history of the community. To strangers they are very protective of their lands and they do not want anyone taking advantage of the richness they have in their lands because it is a community of displaced people. So they accept that outsiders come and work in their lands only if it benefits them as well. But on the other side they need to live and they have expectations of economical development like everyone else, and they want to have big trucks, and TV, all of that. So they are in this game of yes and no, what is allowed, what is not allowed, etc. But I think the fact that the community has set some lands apart to keep them intact and declared a reserve is saying that the conservation discourse within the community is real somehow. It was a communal initiative to set up this reserve. However, we have to think that when you live directly from the natural resources you have to adapt and if its necessary for their survival that they destroy the forest they will do it. That is how I see it. I think also, that the causes of deforestation in the region have not been attacked. The issue here is to make people able to conserve, that they have other economical opportunities, which keep them from deforesting their lands. And I think ecotourism can only solve this partially. We have also to remember that communities are not a block of homogeneous people, so some are interested in conservation, others are not and others say they are but have other interests in reality. Is like everywhere else in the world, people are different and some people are more powerful than others.

AL: Well I think that is all. Thank you very much for sharing your knowledge with me.

FF: You're welcome, and good luck with your project.