

**AN EVALUATION OF THE POTENTIAL FOR IMPLEMENTING
ADAPTIVE CO-MANAGEMENT
IN THE WAODANI SOCIAL-ECOLOGICAL SYSTEM
IN THE ECUADORIAN AMAZON**

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ABSTRACT

Adaptive co-management (ACM), one of the most prominent management approaches to emerge in the recent years, combines iterative learning, flexibility, and adaptation promoted by adaptive management with the principles of nurturing diversity and fostering collaboration among different partners that underpin co-management philosophy. ACM has been proposed as an approach to address the deficiencies of centralized management in ensuring sustainability of social-ecological systems (SESs) in face of future uncertainties. This thesis aims to evaluate the readiness of resource users (the Waodani) as well as external actors (the Ecuadorian State and NGOs) for future implementation of ACM and thus enhancing the long-term social-ecological sustainability of the Waodani SES located in the Yasuni Biosphere Reserve in the Ecuadorian Amazon. Qualitative data obtained by means of focus groups with the Waodani and individual interviews with external actors and Waodani leaders revealed different levels of readiness for ACM. Firstly, in the case of the Waodani, the insufficient fulfillment of some conditions required for successful ACM as well as intercommunity differences in regards to these conditions can complicate the implementation of ACM, unless sufficient external assistance is offered to the SES. The analysis of NGOs demonstrated, on the other hand, a relative readiness for ACM, providing that such aspects as sufficient funding, long-term commitment to collaboration, and inter-institutional linkages are strengthened. The study also found that the Ecuadorian government's potential to contribute to ACM is hindered by the lack of readiness to work with the indigenous society as well as by funding and communication challenges. Furthermore, the resource based economy supported by the State limits the scope of innovation and adaptation. Still, as in the case of other actors, overcoming the challenges and transitioning towards adaptive governance and thus ACM could be possible in the long-term, if recent legal and political changes are truly implemented.

DECLARATION

I, **Malgorzata Bryja**, hereby declare that this thesis is my own original work, and that all other sources used or quoted have been fully acknowledged and referenced. This thesis is submitted for the Degree of Doctor of Philosophy at Rhodes University, South Africa, and has not been submitted for a degree or examination at any other university.

Signature:

December, 2014

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
ACM	Adaptive Co-Management
AMWAE	Association of Waodani Women of the Ecuadorian Amazon (Spanish: <i>Asociación de Mujeres Waodani de la Amazonía del Ecuador</i>)
CAIMAN	Conservation in Areas Managed by Indigenous Groups Project
CNWP	Council of Waodani Nationality of Pastaza (Spanish: <i>Consejo de la Nacionalidad Waodani Pastaza</i>)
CODENPE	Development Council of the Nationalities and Peoples of Ecuador (Spanish: <i>Consejo de Desarrollo de las nacionalidades y pueblos del Ecuador</i>)
COOTAD	Organic Code for Territorial Organization, Autonomy, and Decentralization (Spanish: <i>Código Orgánico de Organización Territorial, Autonomía y Descentralización</i>)
CTEAS	Territorial Special Amazon Circumscricion (Spanish: <i>La Circunscripción Territorial Especial Amazónica</i>)
CTI	Indigenous Territorial Circumscriptions (Spanish: <i>Circunscripción Territorial Indígena</i>)
ECOLEX	Environmental Management and Law Corporation (Spanish: <i>Corporación de Gestión y Derecho Ambiental</i>)
ECORAE	Institute for the Eco-development of the Amazonian Region (Spanish: <i>Fondo para el Ecodesarrollo Regional Amazónico</i>)
FAO	Food and Agriculture Organization
FLASCO	Latin American Faculty of Social Sciences
GADs	Autonomous Decentralized Governments (Spanish: <i>Gobiernos Autónomos Descentralizados</i>)
GAT	Technical Advisory Group
GIZ	German Technical Cooperation
IMIL	Integrated Management of Indigenous Lands
ITT	Ishpingo Tambococha Tiputini (the name of three oil fields within the Yasuni National Park and used in the context of the Yasuni - ITT initiative)
IUCN	International Union for the Conservation of Nature
MAE	Ministry of Environment (Spanish: <i>Ministerio de Ambiente</i>)
MNRNR	Ministry of Non-Renewables Natural Resources
NAWE	The Nationality Waodani of Ecuador (Spanish: <i>Nacionalidad Waodani de Ecuador</i>)
NGO	Non-Governmental Organization
ONHAE	Organization of the Nationality Huaorani of the Ecuadorian Amazon (Spanish: <i>Organización de la Nacionalidad Huaorani de la Amazonía Ecuatoriana</i>)
ONWAN	Waodani Organization of Napo (Spanish: <i>Organización Waodani del Napo</i>)
ONWO	Waodani Organization of Orellana (Spanish: <i>Organización Waodani de Orellana</i>)
PDOT	Development and Land Use Plan (Spanish: <i>Plan de Desarrollo y Ordenamiento Territorial</i>)
REDD	Reduced Emissions from Deforestation and Forest Degradation
RT	Resilience thinking
SENPLADES	National Planning and Development Ministry (Spanish: <i>Secretaría Nacional de Planificación y Desarrollo</i>)
SES	Social-Ecological System
SIL	Summer Institute of Linguistics
TBS	Tiputini Biodiversity Station
TTIZ	Tagaeri Taromenane Intangible Zone
UNESCO	United Nations Educational, Scientific and Cultural Organization

USAID	United States Agency for International Development
USFQ	Universidad San Francisco de Quito
WCS	Wildlife Conservation Society
WER	Waadani Ethnic Reserve
YBR	Yasuni Biosphere Reserve
YBRMC	Yasuni Biosphere Reserve Management Committee
YNP	Yasuni National Park
YRS	Yasuni Research Station

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PART 1: BACKGROUND, RESEARCH OVERVIEW AND CONTEXT FOR THE STUDY

CHAPTER 1

INTRODUCTION: SOCIAL-ECOLOGICAL SYSTEMS AND THE WAODANI

1.1 INTRODUCTION

Many researchers and politicians as well as resource users and environmental activists are struggling with the question whether social-ecological systems (SESs) that embrace ecological processes and human activities can persevere under the pressures exerted by development plans, demographic shifts, market integration, climate change, and technological developments (Redford, 1991; Richards, 1997; Terborgh, 2000; Bremner and Lu, 2006). The need to answer this question becomes even more urgent in the light of the ineffectiveness of centralized management approaches to deal with the social-ecological challenges of resource-dependent areas (Levin, 1999). The failure of these approaches to account for future uncertainty, their non-participatory nature, and lack of adaptability have led to the development of more decentralized approaches that emphasize fostering resilience and adaptive capacity (Armitage et al., 2007). In contrast to rigid centralized management, approaches based on ‘resilience thinking’ embrace the notions of co-management, iterative learning, and adaptation in the face of on-going changes and developments taking place in the SES (Berkes et al., 2003). One of these approaches is adaptive co-management (ACM), which explicitly combines the iterative learning associated with adaptive management (Walters and Holling, 1990; Armitage et al., 2007) and collaborative components of co-management (Folke et al., 2005; Armitage et al., 2007; Plummer et al., 2012).

There is a need, however, for more research as to the potential for successful implementation of ACM in various types of SESs. A need for such research is especially urgent in the case of traditional societies where socio-cultural, geographic, and epistemological aspects can present an additional set of challenges to a management approach that is based on multi-level collaboration and combining different types of knowledge (Stevenson, 2004, 2006; Nadasdy, 2005). Indeed, we have to better understand the conditions under which indigenous people and external actors collaborating with them can best respond to both external and internal pressures facing their SESs (Agrawal, 2001; Dietz et al., 2003; Stevenson, 2004, 2006). The fact that such knowledge is lacking or incomplete presents a strong rationale for the present research (Cundill and Fabricius, 2010; Plummer et al., 2012).

1.2 THE WAODANI SOCIAL-ECOLOGICAL SYSTEM (SES)

This study analysed the potential for ACM in the Waodani SES. The Waodani¹ represent an indigenous society of hunters and gatherers who have had barely fifty years of contact with the outside world (Yost, 1981; Rival, 2002). The Waodani SES lies in the heart of the Ecuadorian Amazon, and the majority of the Waodani inhabit the Waodani Ethnic Reserve (WER) (Stocks et al., 2012). However, apart from this territory, their communities are also located within the Yasuni National Park (YNP) as well as in the portion of the land extending to the west of the park and along the southern section of the Auca road (Chapter 3, Section 3.2.1). Although these additional areas inhabited by the Waodani are not currently recognized as officially belonging to the nationality, they constitute an integral part of these indigenous people's ancestral territory. As a result, the Waodani have recently proposed to reclaim them under the new Ecuador Constitution of 2008 (NAWE, 2011). Therefore, for the purpose of this study, the Waodani SES will encompass the WER, YNP as well as the areas inhabited by the Waodani outside of the park and the WER.

Consequently, the Waodani SES encompasses a high proportion of the Yasuni Biosphere Reserve (YBR); the largest protected region in continental² Ecuador which constitutes the core of one of the richest biodiversity hot spots on the planet. The wealth of the reserve's biological diversity is matched only by its extraordinary cultural heritage. In addition to being inhabited by the Waodani, it is home to the Tagaeri and Taromenane, who are the last remaining uncontacted indigenous peoples in the Amazon, as well as to Kichwa, Shuar and colonist communities (MDG-F and MAE, 2008; Finer et al., 2009; WCS-UNESCO, 2011; Chapter 3, Section 3.2.1). Still, however, due to the Waodani's presence in the YBR's core and buffer zones, and near the transition area (NAWE, 2011, 2012; WCS-UNESCO, 2011), the sustainable management of the Waodani SES is of critical importance to the overall resilience of the YBR.

In light of all these facts, it becomes necessary to evaluate the potential for the implementation of innovative and sustainable resource management approaches in the region. The Waodani SES - and thus YBR, in general - is a subject to numerous anthropogenic pressures, the most devastating of which are those related to oil exploration activities. Oil exploration and road construction have brought ecological devastation and facilitated illegal settlements, colonization, deforestation, illegal timber extraction, over-hunting, and over-fishing (Suarez et al., 2009, 2012; Bass et al., 2010; Stocks

¹ A number of spellings have been used over the years to describe this indigenous group. Some literature sources use the North American English spelling ('Waorani') and some use a Spanish one ('Huaorani') (Rival, 2002). Recently, however, the nationality officially adopted the spelling of 'Waodani' as the preferred one since they do not have 'r' in their language. I will thus use this spelling throughout this thesis. However, I will maintain the original spellings when quoting someone's work or providing the name of the original Waodani organization or documents.

² It does not include the Galápagos Marine Reserve that lies a thousand kilometers from the Ecuadorian mainland and covers an area of around 142,780 km² (WCS-UNESCO, 2011).

et al., 2012; Chapter 4, Section 4.2.1). The recent developments have also exacerbated social inequity, poverty, and health related challenges in the Waodani SES. All these adverse changes are compounded by increasing population pressures in the region, the lack of alternative livelihood options, limited educational and employment opportunities, the fragile organizational structure of the Waodani characterized by frequent leadership changes, and their limited financial, administrative and technical capacities (Robarchek and Robarchek, 1992, 1998; Holt et al., 2004; Ziegler-Otero, 2004; Lu and Wirth, 2011; Mora et al., 2011; Stocks et al., 2012; WCS, 2012b; Chapter 4).

Given the extent of the Waodani's socio-cultural, ecological, and economic problems, a need arises for considering new management options that will promote long-term sustainability of the SES, thereby contributing to building resilience in the YBR region, in general. The present study intends, therefore, to evaluate whether the potential exists for a successful implementation of ACM in the Waodani SES.

The choice of ACM is not accidental, and there is a strong rationale for evaluating the appropriateness of this management concept in the context of the Waodani's SES. ACM explicitly embraces the notions of uncertainty and unpredictability as inherent to SESs (Berkes et al., 2003). By doing so, it focuses on building resilience and increasing adaptive capacity those proponents of new ways of managing SESs advocate (Folke et al., 2005). Instead of continuing the traditional top-down approaches to managing resources - which are rigid and non-participatory, and which characterize the oil industry's and the Ecuadorian State's dealing with the Waodani (Rivas Toledo and Lara Ponce, 2001) - ACM aligns itself with the school of 'resilience thinking' by proposing flexibility, multi-actor collaboration, and adaptation to change (Walker and Salt, 2006; Armitage et al., 2007; Folke et al., 2010; Plummer et al., 2012; Chapter 2).

Furthermore, the argument for considering ACM is supported by both internal and external developments taking place in the context of the Waodani SES. Firstly, emergence and solidification of the Waodani central leadership organization, NAWA, in the previously fiercely egalitarian society (Robarchek and Robarchek, 1998; Rival, 2002; Chapter 4) signals a potential readiness for multi-level collaboration that is essential to ACM (Armitage et al., 2007). Secondly, the new Ecuadorian Constitution of 2008 and the revised Hydrocarbons Law allow the Waodani to be more involved in governing and managing their lands (Asamblea, 2008; WCS-UNESCO, 2011; Chapter 4, Section 4.4.1). Consequently, these recent changes have potentially created a legal and structural platform for instilling collaborative and adaptive governance in the Waodani SES. Moreover, a context for multi-actor collaboration has already begun to emerge. There are NGOs operating in the communities that are ready for collaboration with the Waodani (Section 4.4.4). Similarly, the implementation of the

recently designed Socio Bosque program requires from the Waodani to collaborate with NGOs and the State (Section 4.4.2).

Vertical or multi-scale collaborative efforts with external actors are especially important in the face of political changes facing the Waodani SES. The new constitution intends to provide the Waodani with tools and opportunities to take charge of managing their territories and natural resources (Section 4.4.1). On the other hand, however, the nationality's social-ecological challenges coupled with the lack of adequate education and limited technical, administrative and financial capacities might prevent the Waodani from benefiting from the new context (Mora et al., 2011; Chapter 4). The potentially supportive political context needs to be supplemented by actions, visions, and initiatives that come from both the Waodani themselves and from external players operating in the region. In essence, therefore, both the need and the emerging capacity for multi-actor collaboration have already manifested themselves in the Waodani SES, which, again, substantiates the argument for evaluating the potential for ACM in this social-ecological context.

A rationale for assessing the potential for ACM also stems from the geo-political reality in which the studied SES is situated. The Waodani communities inhabit two principal zones of the Yasuní Biosphere Reserve (core and buffer) and they border with the transition zone (WCS-UNESCO, 2011). They therefore play an important role in the governance and management of natural resources (Chapter 3). The management principles underlying the concept of biosphere reserves reflect, in turn, both adaptive and collaborative components of ACM (UNESCO, 1996, 2008; Schultz and Lundholm, 2010). In other words, the very fact that the Waodani SES is embedded within the larger regional context which explicitly embraces the management model proposed by ACM provides additional support to the topic of this study.

1.3 RESEARCH OBJECTIVES

The overall goal of the research is to evaluate challenges and opportunities involved in any future implementation of ACM in the Waodani SES. Given the complexity of the studied context, the research will assess the readiness of the Waodani people for transitioning into ACM as well as the role that external players might play in any future implementation of this process. The overall goal of the study will be achieved by addressing the following research objectives:

Objective 1: To evaluate the readiness of the resource users and the primary managers of the SES (the Waodani) for future consideration of ACM. The study will employ a methodological framework that assesses some selected conditions for ACM by collecting information from the Waodani and external actors involved with the SES.

Objective 2: To assess the role and impacts of NGOs in facilitating future implementation of ACM in the SES by collecting information from the Waodani and external actors involved with the SES.

Objective 3: To assess the role and impacts of the Ecuadorian State - in the context of its political power and its growing control over the oil industry - in facilitating future implementation in the SES by collecting information from the Waodani and external actors involved with the SES.

Objective 4: To determine the overall potential for implementing ACM in the Waodani SES, given the opportunities and challenges emerging from the above analysis of the Waodani, NGOs, and the Ecuadorian State.

1.4 SIGNIFICANCE OF THE STUDY: THEORETICAL AND PRACTICAL IMPLICATIONS

The study is expected to broaden knowledge about the applicability of adaptive co-management philosophy in non-Western cultures. This is an important contribution of the study, given the fact that there is a lack of sufficient information about ACM in non-Western contexts (Cundill and Fabricius, 2010). Furthermore, specifically in terms of indigenous societies, the knowledge that is available is incomplete, controversial, and often contradictory (Stevenson, 2004; 2006; Nadasdy, 2005; O'Flaherty et al., 2008).

Moreover, the study has practical and more immediate implications. In light of the considerable financial resources being spent in the Waodani communities, it is crucial to know what management approaches are likely to work best with these indigenous people. International funding necessary for developing multi-level collaboration is getting scarcer and more difficult to secure (Banks and Hulme, 2012; Molly, 2012). It is imperative to ascertain how to allocate the available funding in ways that are most beneficial for this vulnerable indigenous group. It is also critical to ensure that funding does not turn into 'hand-outs' that could disempower the indigenous people. Information obtained from the study will therefore assist political leaders, NGOs' representatives as well as Waodani leaders, on both a national and local scale, with practical guidance on how to approach challenges facing this SES.

1.5 LAYOUT OF THE THESIS

This thesis consists of 9 chapters separated into four main parts. The first part provides the background information necessary to contextualise the study and includes four chapters. In Chapter 1, I introduce the study as well as its objectives, research questions, purpose and significance. Chapter 2 outlines the theoretical and conceptual context of the study. In the first part of this chapter, I critically describe and define concepts such as social-ecological system, resilience, adaptive capacity, and adaptive cycle. This part also covers the concept of adaptive co-management (ACM) and its

applicability in the context of complex SESs. In the second part of the chapter, the challenges of implementing multi-scale collaboration in indigenous communities are discussed. Chapter 3 provides information on the study area and its historical context. The biophysical and socio-economic characteristics of the Yasuni Biosphere Reserve and, more specifically, the Waodani SES are described. Furthermore, I present an historical overview of the Waodani people and their SES. This is followed by an assessment of the ecological and socio-economic challenges facing the Waodani SES in Chapter 4. The barriers which underlie and contribute to these challenges are presented and elaborated upon. Finally, in this chapter I also discuss the possibility of a window of opportunity emerging in the SES which could potentially support the implementation of ACM.

The second part of the thesis focuses on methodology and data collection. In Chapter 5, I present the overall conceptual and methodological framework that guided data collection and analysis. Furthermore, the rationale for the selection of specific ACM conditions and their sub-divisions into networking-based, motivation-based, and action-related conditions is discussed. Finally, the methodological approach undertaken to evaluate the readiness of external actors for ACM is explained. Chapter 6 deals with the methods used to collect and analyse data. Firstly, I provide the rationale for choosing qualitative methods of data collection. This is followed by a description of all the stages of data collection and analysis.

The third part provides the results of the study and addresses the first three research objectives. The findings (excerpts from the focus groups and individual interviews) are analysed and interpreted in the context of my personal experiences of working with the Waodani and the relevant literature. This part is divided into two chapters dealing with the findings from discussions with the Waodani, representatives of NGOs, oil companies' representatives, individual researchers, and employees of the Ecuadorian State. These two chapters discuss the potential for ACM in the context of the Waodani, NGOs, and the Ecuadorian State, respectively. In Chapter 7, I assess the Waodani's readiness for ACM. The findings are discussed in relation to the network-based, motivation-based, and action-related conditions for ACM. Chapter 8 provides an analysis of results in regards to external actors' readiness for a potential ACM initiative. This chapter is sub-divided to evaluate NGOs and the Ecuadorian State, respectively.

Finally, the fourth part of the thesis contains Chapter 9, where I address the final research question. Furthermore, the contribution of the study to the area of research - in terms of both theoretical and practical implications - along with limitations of the study and suggestions for further research are discussed.

CHAPTER 2

THEORETICAL AND CONCEPTUAL CONTEXT FOR THE STUDY

2.1 INTRODUCTION

This chapter provides the theoretical background of the study and introduces concepts and literature sources that are used to support the study's rationale and to analyze its results. Firstly, the concept of a social-ecological system (SES), which the Waodani territory exemplifies, is presented and its critical components - resilience and adaptive capacity - are discussed. Following this, adaptive co-management (ACM) is discussed as a practical approach to manage SESs for resilience and adaptive capacity. Finally, given the fact that the study concerns itself with the readiness of the Waodani SES, challenges related to implementing multi-scale co-management in indigenous cultural contexts are discussed drawing on previous findings from co-management research in indigenous contexts.

2.2 SOCIAL-ECOLOGICAL SYSTEMS (SESS) AND KEY CONCEPTS RELATED TO THEIR MANAGEMENT

2.2.1 The failure of centralized management approaches

Traditional management philosophy - often referred to as centralized or top-down resource management (Armitage et. al., 2007) - has been "blamed for the increased vulnerability of resource-dependent communities worldwide" (Armitage et al., 2007: 1). This management approach is based on centralized planning and top-down decision making processes. Its 'command-and-control' philosophy eschews broad participation and knowledge exchanges in favor of efficiency (Armitage et al., 2007: 1). It is argued, however, that centralized management is ill-suited to prevent unpredictable social-ecological problems and to deal with them effectively when they occur (Armitage et al. 2007; Berkes, 2007). Although centralized resource management tries to offer solutions, "resource and environmental problems are proving resistant to [these] solutions" (Berkes et. al., 2003: 1). One of the main deficiencies of centralized management approach, its critics argue, is its structural unpreparedness to face change, uncertainty and unpredictable events (Berkes et. al., 2003). Top-down resource management approaches fail to acknowledge that SESs do not operate in a static and linear manner (Levin, 1999) and that unpredictability is a rule rather than an aberration in the functioning of these systems (Holling, 2001).

There are important consequences that can result from discounting change and uncertainty. Instead of preparing for an unpredictable change and trying to incorporate it into the system, centralized management approaches – with the exception of adaptive management discussed in Section 2.4.1 -

focus on maintaining the system in a relatively unchanged form (Berkes, 2007). Managerial approaches and techniques are meant to preserve the preferred version of the system and are driven by the desire for equilibrium. The system deviation from a narrowly defined vision is considered a managerial failure and efforts are taken to shape the system back into its original form (Berkes, et al., 2003; Armitage et al., 2007). In other words, efforts are made to seal the system from change, and to promote rigidity rather than adaptability or evolution (Gunderson and Holling, 2002).

2.2.2 The concept of social-ecological systems (SESs)

In response to the failure of centralized resource management to account for uncertainty, a new way of thinking about managing resources and ecological systems has been proposed (Berkes et al., 2003). Evaluating the applicability of this new way of thinking in the context of the Waodani SES will be the focus of the present study. At the core of the new approach is an understanding that resource and environmental problems are the result of complex and non-linear interactions, and that there is always an element of uncertainty impacting on management solutions (Levin, 1999; Berkes et al., 2003). In large part, the complexity and uncertainty inherent in managing resource-dependent systems stem from the interactions of human and ecological components of this system (Berkes and Folke, 1998; Berkes et al., 2003). Both of these contain variables with non-linear trajectories, such as culture and social dynamics in case of the human component, and climatic aspects, for example, in the case of the non-human component. Managing them as stable and predictable entities is an illusion and is doomed to fail (Jasanoff et al., 1997).

Therefore, to address complexity of management contexts, the notion of ‘social-ecological system’ (SES) was proposed, which is not a management approach but a term that helps to understand the integrated nature of resource-based systems (Berkes and Folke, 1998; Cumming, 2011). Anderies et al. (2004: n. pag.³) describes an SES as “an ecological system intricately linked with and affected by one or more social systems”. A given SES can be defined by resource users, natural and human-made resources, and the relationships among them (Anderies et al., 2004). From the management perspective, an SES is “composed of common-pool resources, its users, and an associated governance system” (Janssen and Anderies, 2007: 44).

What is crucial about managing SESs and essential to the present study is that, contrary to a centralized management philosophy, it embraces uncertainty and change. The integrated management approach, associated with the concept of SESs, views social and ecological interactions occurring within the system as driven by complexity and interdependence (Folke et al., 2007). Within a given

³ In cases of Ecology and Society online journal, there are no page numbers in articles. In these cases, n. pag. stands for ‘no pagination’

SES, a constant process of interaction or ‘adaptive dance’ is happening (Berkes et al. 2003; Gunderson, 2003), which results in a creation of social-ecological phenomena that are characterized by nonlinearity, uncertainty, and self-organization (Berkes et al., 2003; Olsson et al., 2007).

The geographic area of the present study, which encompasses the Waodani Ethnic Reserve, the Yasuni National Park, and some other territories within the Yasuni Biosphere Reserve, is an example of an SES (Chapter 1; Chapter 3). Not only is it one of the richest biodiversity regions in the world, but it is also home to the ancient indigenous people - the Waodani (Chapter 3). The Waodani have depended on their natural resources for centuries, and they govern themselves through a set of informal management rules under the notion of the ‘open territory’ (Chapter 4, Section 4.3.2.2). At the same time, the Waodani SES is an example of the complex interactions between resource users and a variety of external actors, which could affect the system’s resilience and adaptation capacities in the context of ecological, economic, and social-political change and uncertainty.

2.2.3 Resilience thinking

2.2.3.1 Preparing for the unknown

The complexity and uncertainty inherent in SESs necessitate management approaches and guidelines which also acknowledge complexity and uncertainty (Berkes et al., 2003). What is needed is “complex thinking [...] to bridge social and biophysical sciences to understand, for example, climate history and human action” (Berkes et al., 2003: 2).

Firstly, if unpredictable change or uncertainty is unavoidable, then SES management needs to prepare the system to be resilient rather than resistant to it. The notion of resilience was first introduced by Holling (1973) and defined as a factor that “determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist” (1973: 17). In other words, managing for resilience will allow the SES to respond to changes and absorb disturbances, while retaining its overall structure to ensure its continuous functioning (Walker and Salt, 2006; Liu et al., 2007). SESs that have high resilience are, thus, able to tolerate disturbances or shocks without undergoing fundamental change (Folke et al., 2010; Robinson and Berkes, 2011).

To some extent, however, it is difficult to predict the results of disturbances affecting the SES (Levin, 1999; Norberg and Cumming, 2008). In response to this, in recent years, the concept of resilience has been further developed and expressed through the theoretical framework of ‘resilience thinking’ that encompasses the SES’s persistence in the face of disturbance, its adaptability as well as its possible transformation that could entail crossing thresholds and moving into a different state in order to

maintain overall resilience (Folke et al., 2010). In essence, therefore, adaptation and transformation become essential to maintaining resilience, since, as Folke et al. (2010) argue, “the capacity to adapt and transform for persistence are at the core of the resilience of social-ecological systems (SEs)”. Transformation implies shifting the system into a qualitatively new state in terms of its functions, nature or location (Walker et al., 2004; Chapin et al., 2009; Marshall et al., 2012). Adaptation, on the other hand, keeps the system in the same state in terms of its intrinsic or essential features (Kates, et al., 2012; Shackleton, et al., 2013).

Importantly, however, these two terms do not have to be contradictory. In the words of Chapin et al. (2009: 25), “the dividing line between persistence of a given system and transformation to a new state is sometimes fuzzy”, since there could be a simultaneous coexistence of tendencies to persist and move on to an alternative structure. Indeed, some researchers even prefer to use the term ‘transformational adaptation’ (Kates, et al., 2012; Marshall et al., 2012; Richards and Howden, 2012; Shackleton et al., 2013), where adaptation strategies may “range from short-term coping to longer-term, deeper transformations” (Moser and Ekstrom, 2010: 22026). Transformation is thus seen as an adaptive response (Richards and Howden, 2012) that “occurs at the long-term of the adaptation spectrum” (Marshall et al., 2012: 2). Finally, in some contexts, transformation does not even have to mean the creation of entirely new institutions. As Olsson (2007: 280) argues in his analysis of Kristianstads Vattenrike, “the transformation towards adaptive governance and the emergence of adaptive co-management did not involve the creation of new institutions (rules and regulations) but rather reorganization within existing institutional frameworks”.

Overall, therefore, managing for resilience requires from the system some degree of flexibility, adaptability, and even transformability. Prior to facing unpredictable challenges, the system needs to possess an ability “to build and increase the capacity for learning and adaptation” (Berkes et al., 2003: 13). This capacity for learning and adaptation provides, in turn, an opportunity for experimentation and the development of flexible mechanisms to face future challenges (Walker et al., 2002). Inevitably, therefore, in a highly resilient system, there is space for novelty, innovations, and new trajectories (Folke et al., 2002; Folke, 2006).

2.2.3.2 Social resilience and resilient livelihoods

The words learning, innovation, and novelty endow the concept of resilience with a human element. Indeed, social-ecological resilience encompasses two interdependent realities; ecological resilience, which relates to the functioning of the ecological system, and social resilience (Adger, 2000). In the social-ecological system, there is always interdependence between them, which means that social-ecological resilience might reflect a different reality than social resilience and ecosystem resilience

combined. It is social resilience that the present study will mostly investigate in an attempt to shed light on the potential of adaptive co-management in the Waodani SES.

As defined by Adger (2000: 347), social resilience reflects “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change”. Consequently, to maintain ecological resilience, people and their institutions have to have the capacity to deal with unpredictable trajectories and unforeseen risks that any changes may bring (Berkes et al., 2003). That is why, a socio-ecological system is deemed to possess a high level of social resilience if people residing within its boundaries have skills, abilities, and management approaches to face an unpredictable future with flexibility and innovation. Instead of being crushed by adversities coming their way, they can weather them through an ongoing process of adaptation (Folke et al., 2003) and thus can enhance the sustainability of their complex SES (Berkes et al., 2003). From this perspective, sustainability is no longer seen as the end-product but more as “a dynamic process that requires adaptive capacity in resilient social-ecological systems to deal with change” (Berkes et al., 2003: 4).

Embedded in the concept of resilience is the notion of resilient livelihoods. Livelihoods describe strategies that communities employ to secure a living. As argued by Armitage (2007: 63), resilient livelihoods are related to “the impact of policies, institutions, culture and market forces on the assets (e.g., natural, social, physical, and financial) of individuals and communities, along with the vulnerabilities created by economic, market, and biophysical uncertainty”. As will be demonstrated in this study, many of these factors have contributed to the social-ecological crisis in the Waodani SES. Furthermore, since they are also likely to impact on the future of the Waodani SES, they will be also analyzed in hope of providing a more reliable evaluation of the SES’s readiness for ACM.

2.2.4 Adaptive capacity

2.2.4.1 The concept of adaptive capacity

Adaptive capacity constitutes another concept crucial to the innovative process of managing SESs. As argued by Folke et al. (2005: 452), SESs “with high adaptive capacity are able to reconfigure themselves when subject to change without significant declines in crucial functions”. Adaptive capacity could be viewed as “a component of resilience that reflects the learning aspect of system behaviour” (Robinson and Berkes, 2011: 1186). In other words, adaptive capacity is “the primary human mechanism for managing system resilience” (Engle and Lemos, 2010: 4)

These two concepts, resilience and adaptive capacity, even though related (Keskitalo, 2013), reflect two different features in the process of managing SESs. While adaptive capacity refers to the ability of a social-ecological system to respond to change, resilience determines how much of this change a

system can absorb without turning into a qualitatively different entity (Robinson and Berkes, 2011). For instance, in the case of climate change, the impact of greenhouse gas emission could cause a system to cross the boundaries of its resilience and flip into an undesirable state (Berkes, 2007). In this case, adaptive capacity refers to the ability of a society to move towards the “kind of institutions, resource extraction practices, and economic organization that take advantage of new opportunities, mitigate the worst impacts, and allow for the necessary learning and innovation to cope with a climate regime” (Berkes, 2007: 287). Consequently, adaptive capacity - due to institutional changes, technological advancement, and improvements in knowledge and infrastructure (Keskitalo, 2013) - could facilitate transformation processes that the SES needs to undergo (Section 2.3).

2.2.4.2 Factors underlying adaptive capacity

Adaptive capacity has a set of underlying factors that reflect human interactions and learning processes in the context of the SES. As identified by Folke et al. (2003), adaptive capacity necessary for building or managing resilience requires the presence of four factors. First, ‘learning to live with change and uncertainty’ has to be cultivated. This factor requires “building memory of past events, abandoning the notion of stability, expecting the unexpected, and increasing the ability to learn from crisis” (Berkes, 2007: 288).

Second, ‘nurturing diversity for reorganization and renewal’ needs to be encouraged. As Berkes (2007: 289) writes, “increasing the diversity of players has the potential of bringing new thinking, and expanding the role of information, education, and dialogue”. Therefore, indirectly, by nurturing diversity in the management of the SES, the concept of adaptive capacity differs from the premises of centralized management. The latter’s insistence on efficiency achieved through the streamlining of decision-making processes is replaced with time-consuming and cross-level interactions, and with having multiple centers of powers and expertise. Such a diverse management system, its proponents argue, enriches the portfolio of management solutions, brings forward innovations, prevents hasty decision-making, and prepares the system for an unknown future (Charles, 2007). It also, importantly, enhances control and sanctioning mechanisms, without which increasing adaptive capacity for the purpose of managing for resilience is difficult to achieve (Dietz et al., 2003; Charles, 2007).

Third, ‘combining different types of knowledge for learning’ should be promoted. This factor relates to the second one and emphasizes the complementary nature of different types of knowledge, ranging from indigenous to purely scientific. Allowing different partners to contribute to dealing with challenges at hand stimulates learning and brings forward innovative solutions, which, again, enhances the SES’s readiness to meet unpredictable challenges (Cash and Moser, 2000; Berkes, 2007).

Finally, the fourth factor - 'creating opportunity for self-organization toward social-ecological sustainability' - addresses the SES's ability to reorganize itself in the face of impending exogenous change. It promotes dynamic and collaborative learning that assists the system in creating new institutional and management arrangements (Olsson et al., 2004; Berkes, 2007). Dynamic learning relates to institutional arrangements that are created and re-created through the processes of 'learning-by-doing' (Holling, 1978; Walters, 1986; Walters and Holling, 1990; Folke et al., 2002; Berkes, 2007; Section 2.4.1). Dynamic learning is adaptive in nature because it entails experimentation, reflecting upon mistakes, and incorporating this reflection in future actions (Berkes, 2007). Collaborative learning promotes, on the other hand, knowledge exchange across various levels of the system. It insists on linkages, partnerships, and sharing management responsibilities among different stakeholders (Olsson et al., 2004; Berkes, 2007).

All of these factors underlying adaptive capacity determine the readiness of the SES to embrace resilience approaches. Since, as it will be argued in this thesis, ACM reflects such an approach, the factors affecting adaptive capacity are of crucial importance to the present study. They will be researched and analyzed by means of various proxies to evaluate the potential for ACM in the Waodani SES.

2.3 APPLYING THE ADAPTIVE CYCLE HEURISTIC MODEL TO CONCEPTUALIZE MANAGING FOR RESILIENCE

2.3.1 The dynamic nature of social-ecological processes

The concepts of resilience and adaptive capacity also have strong theoretical support in related areas of research. They find, for example, metaphorical representation in the highly influential adaptive cycle heuristic (Holling, 2001). The concept of the adaptive cycle, which was originally applied only to ecological processes (Holling, 1973, 1992), has grown in its applicability and is now used as a metaphor to elucidate political, economic, natural, and institutional dynamics (Walker et al., 2002; Holling, 2004; Walker et al., 2004) and to frame an analysis of social transformation with its drivers and barriers (Pelling and Manuel-Navarrete, 2011). Its linkage to resilience management of SESs is openly acknowledged (Anderies et al., 2006; Plummer, 2009). As stated by Plummer (2009: n. pag.), the adaptive cycle "is the centerpiece of the resilience approach as it enhances understanding of system dynamics and transformation". In its conceptual framework, the adaptive cycle attempts to describe cyclic processes that govern SESs and other complex adaptive systems (Folke et al., 2010). In general terms, as shown in Figure 2.1, the adaptive cycle proposes that SESs move through four main phases identified as: exploitation (r), conservation (K), release (Ω), and reorganization (α) (Holling and Gunderson, 2002). For a forest ecosystem, for example, the succession and growth from pioneer species (r) to climax species (K) might be a long cycle that is followed by major disturbances

such as fire or storm (Ω). Following this release or collapse stage, reorganization occurs as new nutrients and biomass initiate a beginning of a new cycle (α) (Holling, 2004). Consequently, the adaptive cycle provides an important analytical framework through which various stages of SESs can be tracked and “intervening periods of collapse and reconstruction” can be identified (Pelling and Manuel-Navarrete, 2011: n. pag.).

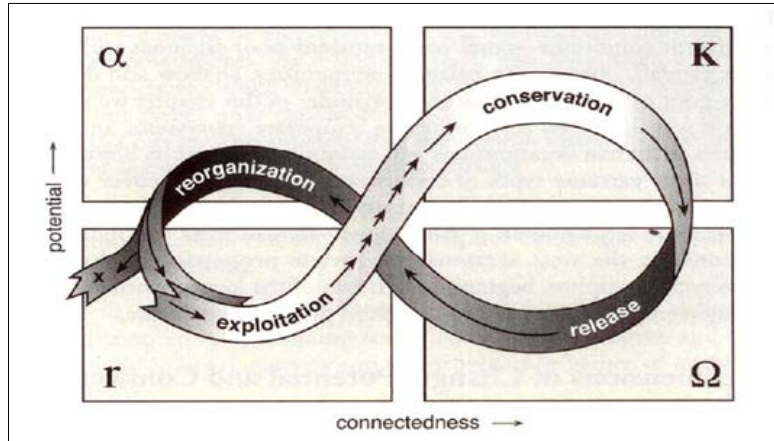


Figure 2.1 Visual representation of the adaptive cycle (Source: Holling and Gunderson, 2002).

2.3.2 The adaptive cycle model: resilience and poverty trap

What links the above described cyclic processes with managing SESs for resilience is the very concept of resilience (Holling, 2001). It determines the transition from one stage to another, both in terms of its timing and social-ecological consequences. Resilience increases during r phase, when there is a constant growth and resources are easily available, but it diminishes in K phase characterized by rigidity and lack of novelty. Then, it collapses in Ω phase and continues to be low at α phase, where novelty plays a crucial role. It starts rising again when entering r phase (Abel et al., 2006; Folke et al., 2010). Holling (2004) identifies the phase Ω as an important part of the cycle because instability and unpredictability inherent to this stage provide an opportunity for a fundamental reorganization of institutions and governance systems. It is resilience that “determines how vulnerable the system is to unexpected disturbances and surprises that can exceed or break its thresholds” (Holling, 2001: 394).

Consequently, even though the adaptive cycle depicts the sequential transition among the four phases of the ecological system, this transition is not entirely predictable, especially in the case of complex SESs. Given the importance of resilience to successful transitioning between the stages of the adaptive cycle, the lack of such resilience, due to low adaptive capacity, can prevent the SES from emerging from the collapsed stage. As Walker et al. (2006) argue, major external disturbances and the lack of resources or necessary linkages (e.g. trust, institutions, social networks, and physical or

financial capital) could imprison the system in a prolonged ‘poverty trap’. The poverty trap sets in when “the potential and diversity have been eradicated due to misuse or an external force, an impoverished state can result, with low connectedness, low potential, and low resilience” (Holling, 2001: 400). In this context, potential refers to the wealth and productivity of the system and “determines the range of future options possible” (Holling, 2001: 393-394). Connectedness or controllability determines, on the other hand, the degree to which the system has control over its own destiny (Holling, 2001). Finally, resilience establishes how vulnerable the system is to external pressures.

When it sets in, the poverty trap can lead to the decrease in adaptive capacity, and thus even though resources - natural or social - might be present in this degraded state, there is no capacity to harness them in order to prompt a desirable change (Carpenter and Brock, 2008). As a result the system can become trapped in a perpetually degraded state with limited options of escape (Gunderson and Holling, 2002; Carpenter and Brock, 2008).

In regards to the social resilience of the system - which is the area of interest in the present study of the Waodani SES - low adaptive capacity evident in a poverty trap can be traced back to barriers (or constraints) occurring on different levels: individual, family, community, regional or national (Measham et al., 2011; Maru et al., 2012; Biesbroek et al., 2013; Shackleton et al., 2013). These barriers are barriers to adaptation, and are seen as impediments to the SES’s transition towards adaptive governance (Olsson et al., 2006; Moser and Ekstrom, 2010, Shackleton, et al., 2013). They might limit people’s abilities or willingness to make necessary changes to deal more effectively with changes in their environment. Overall, social barriers might be related to cognitive and normative barriers as well as institutional structures and governance approaches (Jones and Boyd, 2011). Cognitive barriers involve psychological processes that affect people’s behavior in the face of risk and uncertainty, whereas normative barriers are related to culture, ethics, and values that shape individuals’ response to change or disaster. Perception of risk, cultural norms, and ethics are, in turn, reflected in different types of institutions and governance systems (Adger et al., 2009; 2012; Jones and Boyd, 2011). As Agrawal (2008) argues, institutions play a critical role in building adaptive capacity of the SES. Institutional and governance barriers (e.g. the lack of institutional flexibility, lack of resources use rules) can thus influence how people access and regulate resources, navigate a labyrinth of barriers, and adapt to future uncertainties (Jones and Boyed, 2011; Biesbroek et al., 2013). Institutional barriers might be further related to what Jones and Boyd (2011) refer to as human and informational barriers. These barriers might arise due to the impacts of technology, knowledge, skills, access to information, and economic resources on resource users’ abilities to adapt (Jones and Boyd, 2011; Biesbroek et al., 2013). Importantly, all these barriers can also be set in a wider historical

and political context that contributes to creating path dependencies⁴ which resource users find difficult to overcome in their attempts to escape a poverty trap (Shackleton et al., 2013).

Barriers and the concept of a poverty trap are important to the present study. As it will be argued, the Waodani SES is likely to have been experiencing a poverty trap for a considerable period of time as the result of the Waodani having been forced to function in a system they had little part in creating (Chapter 4). Therefore, a number of the barriers identified above could apply to this SES, and considering both current and future impacts of these factors in the context of implementing ACM becomes a necessity.

2.3.2.1 Transformation and windows of opportunity

Given the pervasiveness of a poverty trap, a profound change or transformation in the system's internal dynamics might be required to force the system out of its degraded state (Walker et al., 2006; Carpenter and Brock, 2008; Folke et al., 2009). Importantly, the process of change or transformation is usually not accidental. Instead, it is a purposeful action because it requires from resource users to overcome barriers by means of "concerned effort, creative management, change of thinking, prioritization, and related shifts in resources, land-use, institutions, etc." (Moser and Ekstrom, 2010: 22027). In other words, the process of transformation leads to a deliberate reorganization in resource management strategies through collective action and institutional changes (Shackleton et al., 2013). Its overall goal is creating a system that, due to its reorganized and innovative features, possesses greater resilience and adaptive capacity and is thus better prepared to face an unknown future (Chapin et al., 2009).

In order, however, to allow for the SES's transformation towards adaptive governance, a temporary 'window of opportunity' needs to emerge (Olsson et al., 2006). Paradoxically, the existence of social-ecological challenges is a prerequisite for the formation of such a window of opportunity, a concept that is still hypothetical in science and not sufficiently proven. As Olsson et al. (2006: n. pag.) writes, "these windows can be a result of environmental crises, policy failure, fiscal crises, activist groups, lawsuits, or slowly changing institutional structures". Crises or challenges contribute to the sense of urgency and can motivate people to become determined to initiate transformation (Olsson et al., 2006; Chapin et al., 2009). Ironically, therefore, as it will be argued, social-ecological challenges present in the Waodani SES (Chapter 4) could also be a motivational factor or catalyst for action that could help

⁴ Path dependencies arise from the actors' decisions to maintain the same governance and institutional structure because of customs, experiences or lack of willingness to undertake any risks in the face of uncertainty and transaction costs involved in the change (North, 1990; Daedlow et al., 2013).

in forming new operational and collective rules and thus allowing a window of opportunity to emerge (Ostrom, 1990; Berkes et al., 2003).

For instance, corruption, misuse of resources, and unsustainable or ecologically damaging practices could be curtailed by the introduction and enforcing of stricter rules and conflict resolution mechanisms (Dietz et al., 2003). However, a sense of urgency brought on by persistent social-ecological challenges and an internal re-organization of the institutional framework of the SES can be benefited from only if resource users' actions cannot be blocked or contradicted by constitutional level policies of countries in which individual SES are located (Ostrom, 2005). It is thus one of the goals of the present study to evaluate whether the external context associated with the Ecuadorian State does not present an insurmountable obstacle to building resilience through adaptive governance.

Overall, therefore, the processes assisting the SES in emerging from the poverty trap could take place simultaneously on different levels. The shift on the level associated with resource users has to be accompanied by changes taking place on the supra-community level associated with constitutional changes and external actors who are not direct resource users. Going back to the adaptive cycle - which provides a metaphorical representation of a poverty trap, transformation, and a window of opportunity - the dynamic nature of SES processes can be illustrated through individual adaptive cycles hierarchically nested at different temporal and spatial scales (Holling, 2001). Although these cycles are partly independent and might be at different stages of the cyclic process, they are still impacting on one another through constant interactions and feedback processes (Berkes et al., 2003; Chapin et al., 2009). Holling (2001) calls this hierarchical structure, panarchy, and emphasizes that taking into account spatial and temporal interactions among various adaptive cycles is crucial to strengthening the system's resilience and thus benefiting from the emergence of a window of opportunity. As Holling (2001: 404) argues, "windows open that can then allow those independent inventions and adaptations to interact, producing a cascade of novel self-organized patterns across a panarchy and creating fundamental new opportunity". It is this interactive and multi-level nature of the processes impacting on the resilience of the SES that supports the rationale for the comprehensive evaluative approach of the potential for ACM undertaken in this study. This requires that the Waodani SES be analyzed through the prism of resource users, NGOs, and the Ecuadorian government.

2.4 ADAPTIVE CO-MANAGEMENT (ACM) AS AN APPROACH TO BUILD RESILIENCE IN THE SES

2.4.1 ACM as a practical response to fostering resilience thinking and adaptive capacity

Given the challenges facing SESs, a need has therefore arisen for creating a practical approach that would translate the theoretical understandings into daily management practice. Adaptive co-

management (ACM), which is one of the most prominent management approaches to emerge in the recent years, purports to address this need (Armitage et al., 2007; Huitema, et al., 2009; Plummer et al., 2012). Since the applicability of ACM to the Waodani SES constitutes the topic of the present study, I intend to provide a critical evaluation of this management approach.

Firstly, ACM emerges as a response to identified social-ecological problems and thus follows the sequential process of addressing crises proposed by the adaptive cycle heuristic and discussed in Section 2.3. As Olsson et al. (2006: n. pag.) writes, “adaptive co-management of ecosystems usually starts with responses to crises by individual actors that expand to groups of actors and eventually become multiple-actor processes”. Furthermore, ACM relates to the concept of adaptive capacity. For example, it explicitly addresses the issue of learning to live with uncertainty which, as argued in Section 2.2.4.2, is the first factor underlying adaptive capacity. ACM also embraces the premises of adaptive management (Walters and Holling, 1990; Armitage et al., 2007). This approach to managing resources acknowledges that social-ecological knowledge is never complete and thus needs to be tested, expanded, revised, and reflected upon through the dynamic processes of learning-by-doing (Holling, 1978; Walters, 1986; Walters and Holling, 1990; Folke et al., 2002, 2005). Learning-by-doing involves, in turn, developing management hypotheses, applying them into practice, evaluating feedback, revising the hypotheses on the basis of this feedback, and starting again (Armitage et al., 2007; Berkes, 2007; Allen et al. 2011; Plummer et al., 2012). This constant process of iterative learning or adjusting management decisions on the basis what has been learned promotes adaptive management of social-ecological systems (Holling, 1978) in order to “reduce uncertainty, build knowledge and improve management over time in a goal oriented and structured process” (Allen et al., 2011: 1339).

Moreover, ACM addresses the second and the third factors underlying adaptive capacity (Section 2.2.4) through its alignment with the premises of co-management which promotes nurturing diversity by fostering linkages and enhancing collaboration among different partners involved in governing an SES (Folke et al., 2003; Carlsson and Berkes, 2005; Berkes, 2007, 2009). By providing a platform for coming together of various actors, co-management promotes shared understanding, exchange of perspectives, and joint decision making (Berkes, 2002; Folke et al., 2005). Its proponents argue that the best way to address social-ecological complexity and uncertainty lies in facilitating mutual learning among actors and organizations collaborating with one another across various levels (Olsson et al., 2004; Armitage et al., 2007). Overall, therefore, by its direct linkage to the concept of adaptive capacity, ACM provides an opportunity to test the feasibility of resilience approaches in a real SES context. The present research, which focuses on the Waodani SES, is an attempt to take advantage of this opportunity.

2.5 ENSURING SUCCESSFUL ACM BY TRANSITIONING THE SES TOWARDS ADAPTIVE GOVERNANCE

2.5.1 The concept of adaptive governance

Since ACM is conceived of as a practical management approach that is dynamic, multilevel, and polycentric (Djalante et al., 2011), it requires governance structures that would support its adaptive and co-management components (Gunderson and Light, 2006). In this context, transformation of the SES towards adaptive governance is a prerequisite for successful implementation of ACM (Olsson, 2007). Adaptive governance is considered “an evolving research framework for analyzing the social, institutional, economic and ecological foundations of multilevel governance modes that are successful in building resilience for the vast challenges posed by global change, and coupled complex adaptive socio-ecological systems” (Stockholm Resilience Center, 2008: 17). In line with the principles of ACM, adaptive governance emphasizes cross-scale collaboration and mutual learning (Brunner et al., 2005; Folke et al., 2005) to increase SESs’ capacity to build resilience in the face of uncertain future (Djalante et al., 2011). Indeed, linkages between adaptive governance and ACM are explicitly acknowledged since “governance that is characterized by polycentric institutions, legitimacy and transparency, empowerment and social justice, diversity of participating actors, and where multilevel institutions are matched with social-ecological dynamics [...] is also characteristic of ACM” (Plummer et al., 2013: n. pag.).

2.5.2 Transitioning towards adaptive governance

Due to ACM’s direct linkages to adaptive governance, transitioning towards this governance model allows for successful implementation of ACM. It is essential, therefore, to analyze in greater detail factors that are necessary for the emergence of adaptive governance in a given SES. Djalante et al. (2011) discuss four characteristics of adaptive governance related to the social component of the SES that are crucial to building resilience. They include: polycentric or multilayered structures; participation and collaboration supported by leadership, social capital, and trust; self-organization or flexible networks that are actualized by bridging organizations; and learning and innovation (Figure 2.2).

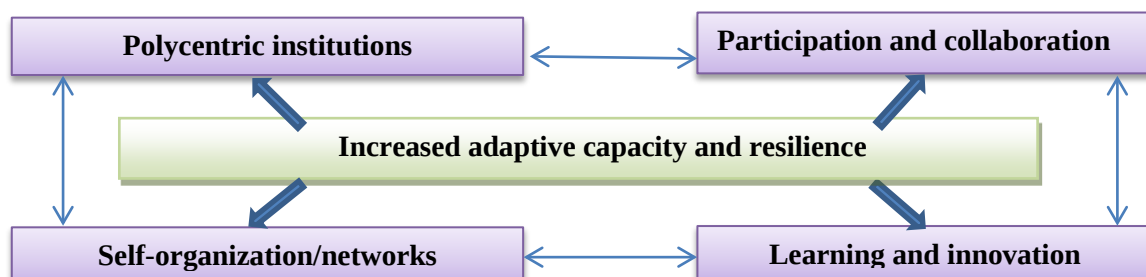


Figure 2.2 Key characteristics of adaptive governance that build adaptive capacity and the system’s resilience (Source: Djalante et al. 2011).

Firstly, polycentric institutional arrangements are considered crucial in the context of building adaptive capacity and resilience (Djalante et al. 2011). Overall, the polycentric structure is characterized by institutional arrangements that are “nested in quasi-autonomous decision-making units operating at multiple scales” (Folke et al., 2005: 449). Local organizations, governmental bodies, and NGOs can be incorporated into it. The main goal of polycentric structures is to maintain linkages between formally independent centers of decision-making and strike the right balance between decentralization and the overall sense of cohesion (Imperial, 1999; Djalante et al., 2011).

Institutional and management diversity incorporated into ACM processes might even reach a level of redundancy (Levin, 1999; Dietz et al., 2003; Low et al., 2003), explicitly distancing ACM from the dogma of efficiency that centralized management insisted upon (Dietz et al., 2003). Certainly, nesting different institutional arrangements in various layers of a multi-level system complicates decision-making processes (Imperial, 1999). On the other hand, however, a complex, layered, and redundant institutional framework strengthens monitoring efforts and makes it more difficult for people to evade rules (Dietz et al., 2003). Deficiencies or gaps in one institutional level might be addressed and accounted for on a different institutional level. Furthermore, complexity and redundancy in institutional arrangements protect the system from the consequences of hasty or unilateral decisions (Charles, 2011). By slowing down the implementation of management decisions, complex and layered institutions provide opportunities to reconsider and improve these decisions, which can make the system more resilient to both current and future challenges (Charles, 2011). Overall, therefore, “redundancy of institutions and their overlapping functions across organizational levels may play a central role in absorbing disturbance and in spreading risks” (Folke et al., 2005: 453). Evaluating how all of these aspects relate to the Waodani SES is one of the goals of the study, since, as discussed in Sections 3.2.1.2 and 4.4.4, an increasingly polycentric management structure has been recently forming in the SES.

To realize its structural potential, the diversity of institutional arrangements represented by a variety of stakeholders operating on different levels needs to lead to participation and collaboration. Participation and collaboration emerge thus as a second characteristics of adaptive governance. The extent of its presence depends, in turn, on having good leadership, sufficient social capital, and mutual trust in the polycentric environment of a given SES. These aspects provide a motivational drive and a supportive context for overcoming challenges inherent in working together of diverse groups and organizations. Leaders, due to their mediating and bridging capacities, assist in the processes of knowledge collection and information exchange, and in building cross-scale linkages with external actors, which enhances the SES’s adaptive capacity and resilience (Berkes et al. 2003; Olsson 2004; Folke et al. 2005). Social capital, on the other hand, demonstrates the level of connectedness among actors and the strength and quality of social relations. It is a reflection of mutual-trust and

commonality of values, and can thus generate collective action and sustain collaboration through its various stages (Coleman, 1988, 1990; Putnam, 1995; Harpham et al., 2002). In this context, bonding social capital - which largely overlaps with a horizontal construct of social capital - refers to linkages and collaboration between people in the same social context or on a community level (Narayan, 1999; Harpham et al., 2002). Although bonding social capital is crucial to initiating collective action, when it is too strong, it can lead to group thinking and reluctance to change the status quo. In contrast to bonding social capital, bridging or vertical social capital refers to linkages and relationships between different levels of the system, such as resource users, government entities, and NGOs (Harpham et al., 2002).

Furthermore, participation and collaboration across various layers of the polycentric structure can be further aided by the third characteristics of adaptive governance that relates to self-organization facilitated by governance networks and bridging organizations (Folke et al., 2005; Olsson et al., 2006). Networks can form informal shadow networks (Olsson et al., 2006), or they can enjoy a considerable level of legitimacy, which allows them to play the role of both shadow and governance networks (Hahn, 2011). Different types of networks provide an opportunity for people to interact and thus “help to facilitate information flows, identify knowledge gaps, and create nodes of expertise of significance for ecosystem management that can be drawn upon at critical times” (Olsson et al., 2006: n. pag.). By creating a space and context for promoting the processes of social learning, innovation, and adaptive governance (Hahn, 2011), they enhance resilience of the SESs (Folke et al., 2005). In regards to the Waodani SES, it needs to be seen to what extent the YBRMC (Section 4.4.4) could function as a governance network that brings people together to deal collectively with different aspects of resource management challenges.

Contributions of networks to enhancing participation and collaboration can be further increased by the presence of bridging organizations. These organizations facilitate cross-scale interactions and could assume the role of leaders (Olsson et al., 2006, 2007) to promote connections within and amongst communities as well as between communities and other stakeholders (Folke et al., 2005; Berkes, 2009). Through their bridging functions, they can assist the SES in building trust, conflict resolution, learning, delivering information and feedback, access to resources, and identification of common interests (Folke et al., 2005; Davidson-Hunt, 2006; Hahn et al., 2006; Olsson et al., 2006; Berkes, 2009; Schultz and Lundholm, 2010). An NGO working on increasing communication, collaboration, and shared learning between resource users and government officials might be an example of a bridging organization (Djalante et al., 2011). Therefore, in the context of the present study, the potential bridging role of NGOs such as WCS has to be assessed.

Finally, an institutional framework that is suitable for adaptive governance and, in turn, ACM, should be flexible and evolving rather than static (Pope, 2002; Olsson et al., 2003). Therefore, participation and collaboration should lead to innovation and learning to help the SES adapt to an unpredictable future. Changeability and creativity built into institutional arrangements relate to dynamic or iterative learning that ACM champions as a way to increase adaptive capacity (Folke et al., 2005). Therefore, flexible institutions rather than those that rigidly maintain their current structure are better suited to manage the SES for resilience (Cundill, 2008). Such an institutional framework allows for “adaptively replacing or supplementing management measures” (Charles, 2007: 85) and more quickly responds to unpredicted internal or external developments. Experimentation, learning from this experimentation, and then trying, again, in an innovative way, to address the changing reality of the SES lie at the core of adaptive governance. Indeed, as Dietz et al. (2003) argue, on-going revisions and modifications are an inherent part of this governance model.

The concept of ‘double loop’ learning becomes pertinent in this context because it can transform fundamental values and norms governing a given SES (Armitage et al., 2007: 9). It requires participatory learning and “a commitment to valuing different knowledge systems and epistemologies” (Armitage et al. 2007: 9). Therefore, in the context of a potential epistemological gap that promoting co-management in indigenous societies often entails (Section 2.6.2), it is crucial to assess to what degree learning and innovation can be introduced to the polycentric structure of the Waodani SES.

2.6 ADAPTIVE CO-MANAGEMENT AND INDIGENOUS SOCIETIES:

EPISTEMOLOGICAL, CULTURAL, AND SOCIO-ECONOMIC ISSUES

2.6.1 Introduction

In this section, aspects and challenges related to the implementation of ACM in indigenous cultures will be presented and analyzed. The main focus will be on the co-management aspect of ACM. As Fabricius and Cundill (2010) indicate, in contrast to ‘adaptive’ part of ACM - which is a prerequisite for survival in rural areas and thus requires lesser intervention - the collaborative part poses more challenges for traditional societies. It requires indigenous people to establish vertical links and co-management processes with the outside world and external actors. Therefore, the notion of participatory co-management demands special attention in considering potential for ACM in indigenous societies, such as the Waodani SES. From this perspective, the purpose of this section is two-fold: discussing co-management challenges related to both indigenous and external actors as well as situating these challenges, whenever possible, in the context of the Waodani and their SES. It is hoped that such organization of the section will later prove beneficial in analyzing and discussing the data collected in the study.

2.6.2 Epistemological differences

2.6.2.1 Different interpretation of the reality

As Kofinas (2005: 181) writes, for many indigenous societies, especially these with strong hunting traditions - a category to which the Waodani as hunters and gatherers belong (Rival, 2002) - the legitimization of knowledge “is tied to individual experience, and how a hunter’s access to power is achieved through the dream world and intimate experiences with animals, land, and community”. Therefore, “the skepticism of northern traditional hunters about Western traditional knowledge is sometimes expressed” (2005: 181). It is crucial to consider if genuine ACM can be introduced to such a context. Just as Western researchers can be prone to discount traditional knowledge because of its disconnect from hard scientific data and to treat it as irrational, indigenous people can also reject Western knowledge due to its perceived detachment from the first-hand reality (Feit, 1986; Kofinas, 2005). The vast gulf in mutual understanding that indigenous people and external actors have about each other can make implementing ACM a daunting proposition (Paradies et al., 2008). This aspect directly relates to the challenge that underlies the third factor of adaptive capacity, namely combining different types of knowledge for adaptive learning (Folke et al., 2003).

For instance, a question arises how indigenous societies approach the very notion of managing natural resources. As it will be argued in this study, the Waodani SES is in the midst of the rapid change that includes development activities that threaten the sustainability of its natural resources. Still, in relation to resource management, Stevenson (2006: 169) writes that “the notion that humans are capable of ‘managing’ plants or animals is unfathomable for many indigenous peoples”. Therefore, the Western concept of uncertainty that lies at the heart of ACM and underlies the concept of learning-by-doing - might be countered by a belief that resources cannot be managed. For instance, as argued in Section 4.3.2.2, the concept of natural abundance or the ‘forever-giving forest’ is deeply ingrained into the belief system of many indigenous groups, especially hunters and gatherers such as the Waodani (Woodburn, 1982; Rival, 2002). In essence, since the forest constitutes the source of inexhaustible wealth, there is no need for any type of management. How can ACM be introduced into those societies that appear to reject the main premise behind this approach of managing resources? Do they really reject it, however? There is some research suggesting the points of intersections between local management approaches and adaptive governance (Berkes et al., 2000; Tengö and Belfrage, 2004). Since the Waodani strive for local governance and have been historically hunters and gathers, the notion of ‘forever-giving forest’ lies at the core of their cultural beliefs (Kane, 1995; Rival 2002). Therefore, assessing the readiness of this indigenous society for ACM will have broader implications for the area of research.

2.6.3 Polycentric governance

As argued in Section 2.2.4, resilience and adaptive capacity of an SES can be enhanced by nurturing diversity and bringing together a broad range of perspectives (Folke et al., 2003, 2005; Pretty et al., 2009; Crane, 2010). Although defensible in theory, such an approach can backfire when differences between the parties are so vast as to be potentially unbreachable. For instance, incorporating various perspectives in an effort to manage the SES for greater sustainability can become a challenge when the indigenous perspective on the community level is opposed to the notion of conservation. This is a challenge relevant to the present study because, as it will be argued in Section 4.3.2, one of the central beliefs among the Waodani people is the notion of forever-giving and inexhaustible forest (Kane, 1995).

In relation to this, as argued by Shackleton and Campbell (2001), devolution of power in managing resources away from centralized structures and towards local resource users does not always benefit SESs. In other words, empowering communities to self-manage the SES does not ensure that the SES will become ecologically sustainable. The success of this process is context specific rather than universal and might depend on such aspects as cultural beliefs, importance of the resource for community members, and their motivational drive to enhance sustainability (Shackleton and Campbell, 2001).

Furthermore, looking back at her experiences with complex common pool regimes, Ostrom (2005: 286) warns that polycentric systems can generate “conflicts that escalate from misunderstanding to ever more serious charges and countercharges that turn to violence and certainly negative processes”. For instance, involving local leadership with external governance structures - as it is advocated to instill polycentrism and enhance management diversity (Section 2.5.2) - can both strengthen and weaken this leadership in the eyes of resources users. On one hand, indigenous leaders’ dealings with the external world can be viewed by local resource users as a promise of financial gains and other benefits (Ziegler-Otero, 2004). Again, it will be demonstrated in the study that this is an expectation that has manifested itself in the Waodani SES and needs to be addressed. On the other hand, however, close collaboration with external forces can undermine the legitimacy of local leadership. As Kofinas (2005: 181-182) argues, it is uncertain “whether informal local authority can sustain their legitimacy while nested within larger, more dominant institutional processes” since there is “the potential for community co-management board members to lose touch with their constituents and be socialized and co-opted by conventions of state management”. A co-management context might overwhelm and subordinate local indigenous leaders and thus change management priorities from what is internally needed to what is externally promoted (Ostrom, 2005; Adger et al., 2006). Indigenous cultures which are relatively unfamiliar with the Western ways of negotiating and exercising power might be especially vulnerable to manipulation (Adger et al., 2006; Cundill, 2008). This is a critical aspect to

consider in the case of the Waodani people who have been in contact with the outside world for barely fifty years (Yost, 1981; Rival, 2002).

Finally, there is a danger that access and linkages to external sources of power or funding might lead to the emergence of local elites which can become powerful, corrupt, and indifferent to communities' interests (Ostrom, 2005).

2.6.4 Disingenuous partnerships

Sometimes, epistemological and ontological differences may persist but are hidden from view. Since there are often tangible rewards - financial help or logistical assistance - attached to collaborative management projects funded in co-operation with Western countries and organizations, indigenous communities might agree to participate in these projects for solely opportunistic reasons (Ostrom, 2005). It is expected that the study's approach that entails collecting data from the Waodani as well as from external actors will shed light on the genuineness of the collaborative efforts in the SES.

Apart from being antithetical to true ACM and the notions of nurturing diversity (Folke et al., 2005), opportunistic attitudes can have long-lasting consequences by making "it difficult to build upon indigenous knowledge and institutions" (Ostrom, 2005: 276). In this context, the question arises "to what extent does power sharing result from the implementation of formal co-management agreement and to what extent is it achieved through the voluntary actions of key individuals?" (Kofinas, 2005: 182) This is yet another issue that the present study will tackle in the context of the Waodani's contentious relationship with the Ecuadorian State and the oil industry.

2.6.5 Perceiving indigenous people through the prism of their traditional culture

2.6.5.1 Stereotypical and patronizing attitudes to indigenous culture

External actors' patronizing attitudes toward indigenous communities can hamper any potential collaborative efforts. As McGregor (2009: 77) writes, "aboriginal peoples and their knowledge are viewed as *objects* suitable for study rather than *people for working with*". Wilk (1996: 11) goes even further by stating that "participation by local people is often only token and superficial; instead of being partners, the local users are often treated as guinea pigs". Clearly such a patronizing attitude goes against the notion of collaboration and knowledge exchange. It is therefore crucial to find out whether this attitude is prevalent among NGOs and other external actors collaborating with the Waodani.

Furthermore, there appears to be a tendency to treat traditional knowledge as monolithic and neatly compartmentalized in contrast to "Western (modern) knowledge [that is] characterized by

experimentation” (Eyong, 2007: 121). Although to a lesser degree than in the earlier times (Harding, 2005), the Western perception of indigenous people “coincides with the ideas of the savage, in that the people are unchanging - and forbidden to change” (Pace, 2009: 3). As the overview of the Waodani history demonstrates (Section 3.3), this is the perception that in the earlier times predominated in the Ecuadorian national consciousness. The degree to which it still exists and how it might affect any future ACM initiatives will be analyzed in the present study. These are important concerns to consider, because traditional knowledge is “is dynamic rather than static” (Asante, 2005: 7) and comprises a diversity of views and attitudes that we all, as human beings, share. As Asante (2005: 7) writes, “the label 'Aboriginal People' involves an enormous diversity of people, groups and interests located within varying socio-political, economic, and demographic situations. They do not make up a single-minded monolithic entity, speaking with one voice”. It is reasonable to expect that the same might apply to the Amazonian indigenous groups, including the Waodani. However, many international NGOs and other organizations assist indigenous people because they want them to remain who they think they are in terms of their worldview, beliefs, clothing, superstitions, livelihood strategies, and settlement patterns. This often creates the image of people frozen in time who are “victims or survivors lacking the ability to take independent action” (Harding, 2005: 324).

Therefore, the evolutionary change which - for better or worse - we allow for ourselves is denied to indigenous people (Pace, 2009). One of the reasons that this change is not permitted is because ‘being indigenous’ or ‘noble savage’ brings economic benefits. The image of “living a primitive and pristine life yet untouched by modernity, [...] fit[s] nicely into the touristic representation of the authentic Others” (Haug, 2007: 32). The transformation of indigenous people into being ‘less indigenous’ can make them appear less attractive or exotic and might, in turn, lessen efforts to ensure their physical preservation (Kamuaru, 1996). It is topic of a potential relevance in the socio-cultural context of the present research because. The Waodani culture and history can evoke fascination due to the Waodani’s uniqueness of never having been truly subjugated by external forces (Ziegler-Otero, 2004). Furthermore, the Waodani’s unending battles with the powerful oil industry which could “count on unshakeable support of the Ecuadorian state” (Ziegler-Otero, 2004: 16) has turned them into a brave ‘David’ fighting the powerful ‘Goliath’.

This “consumption of authentic cultural symbols” (Haug, 2007: 32) and commodification or commercialization of culture can also have serious consequences for the implementation of ACM projects in indigenous communities. Perceiving indigenous people through the lens of cultural and anthropological stereotypes can create an impression that they cannot manage problems that the ‘modern’ world imposes. Indeed, as Harding argues, although many old and crude stereotypes about indigenous people slowly recede, they are replaced by new ones, such as that they are “unable to meet modern standards of governance” (2005: 324). This is a dangerous conviction on the part of external

actors collaborating with indigenous groups, and it needs to be considered because many of these groups, such as the Waodani, are already integrated into the ‘modern’ world. As it will be argued, they have no choice but to face new challenges this modernity or ‘civilization’ imposes (Kane, 1995; Ziegler-Otero, 2004). Therefore, by perpetuating condescending and patronizing attitudes towards indigenous people, external actors arbitrarily limit their livelihood options as well as long-term chances for the sustainability of their SESs.

2.6.5.2 Cultural interference

Paradoxically, the goal of reaching ‘shared understanding’ and knowledge exchange, which adaptive capacity depends on and ACM explicitly promotes (Folke et al., 2005; Armitage and Plummer, 2007), can also have its downside in terms of creating a tension between accepting modernization and maintaining traditional ways of living. A scenario could emerge where embracing modernity could lead to the erosion of the traditional way of life. It becomes important therefore to evaluate how the notion and the reality of knowledge integration are viewed by indigenous resource users, in the present case, the Waodani people. Indeed, as discussed in Section 3.3, in the past the clash between modernity and tradition in the Waodani SES led to the transformation of the latter. The Waodani’s social and cultural re-organization in the aftermath of the first peaceful contact with the missionaries (Yost, 1981) illustrates this reality. To what extent any future implementation of ACM might bring about similar consequences needs to be addressed in the present study. A rationale for this also stems from research conducted in other indigenous contexts. For example, Stevenson (2004) sees knowledge integration not only as a mere challenge of co-management but as an existential threat to indigenous communities. He writes that “it would be difficult to conceive a more insidious form of cultural assimilation than co-management as currently practiced” (Stevenson, 2004: 68). In essence, any attempt to combine the Western knowledge with the traditional knowledge carries a risk of the latter being overwhelmed by the former. Merging these two vastly different epistemologies is not necessarily an additive process but, instead, it is a process that can lead to ‘watering-down’ and undermining traditional cultures (Stevenson, 2004).

Furthermore, since ACM insists on multi-level adaptive collaboration, it requires an identifiable indigenous partner to participate in this collaboration. Achieving this goal might be, however, challenging or even culturally intrusive in the case of hunters-gatherers societies, such as the Waodani that, in the past, were culturally opposed to having any central or local representation (Robarchek and Robarchek, 1992). Given their short interactions with ‘the external world’ – in comparison with other indigenous groups (Yost, 1981; Rival, 2002) - insisting on central representation for the purpose of having a well-defined local partner in collaboration can upset the balance and social tapestry of the indigenous society. Introducing power differentials to a previously egalitarian society can create social tensions and rebellious tendencies, and can lead to the emergence of local elites prone to

corruption and nepotism (Ostrom, 2005), as was the case with the Waodani SES in the past (Ziegler-Otero, 2004). Whether all these concerns might again emerge in the future is an issue that the present research needs to consider.

2.6.6 The challenge of meeting external objectives and priorities

Ensuring funding that is essential to the survival of many community-based programs often demands re-packaging collaborative efforts in indigenous contexts into units of knowledge that are compatible with the Western management philosophy. In essence, NGOs are frequently put in a difficult position “to strike an almost impossible balance between responding to the needs of their recipients, while still meeting the demands of their donors” (Molly, 2012). It can be even more challenging in the context of ACM because, as Ostrom (2005: 286) argues, “adaptive process[es] involving multiple actors at diverse levels [...] look terribly messy and hard to understand”. This contradictory, messy, and evolving nature of adaptive co-management might be acceptable to people who are physically close to the studied context and immersed in its complexity, but less so to those who are removed from indigenous communities.

The practicability and pragmatism of ACM will therefore be scrutinized in the present study, especially in Chapter 8, since the Waodani SES is a remote and relatively inaccessible territory (Kane, 1995). In such a context, the lack of frequent face-to-face contact between resource users and external partners and entities could, indeed, become a challenge. Paradoxically, NGOs’ explicit affirmation of collaborative ‘messiness’, alternative epistemologies, and urgent but not easily solved indigenous needs might undercut rather than enhance innovative management. Such a holistic approach can clash with increasing demands for accountability, clarity, and meeting deadlines as well as with clearly defined objectives and indicators that are necessary to justify further funding (Edwards and Hulme, 1996; Barr et al., 2005). As Banks and Hulme (2012: 12) write, “NGOs face significant difficulties tailoring programmes to local needs and realities, incentivized, instead, in a competitive and donor-driven funding environment, to formulate their strategies and policies in line with donor priorities and interests”. This donor shaped behavior seems understandable given that about 85 to 90 percent of NGOs’ funding comes from external sources (Ebrahim, 2003; Tvedt, 2006; Banks and Hulme, 2012). The external funding dependency of NGOs can lead, however, to neglecting local needs and focusing, instead on “the external determination of local agendas” (Banks and Hulme, 2012: 12) where “budgeting protocols [...] favor ‘product’ data over ‘process’ data” (Ebrahim, 2003: 78). NGOs’ dependence on external funding is also the reality in the Waodani SES and thus needs to be addressed in the present study (Section 4.4.3).

Finally, competing for funding from a similar and limited pool of donors can motivate NGOs and other organizations to be secretive and reluctant to collaborate with one another (Clark, 1995; Fyvie

and Ager 1999; Ebrahim, 2003; Banks and Hulme, 2012). Such tendencies can be especially counterproductive when these organizations are operating in the same geographic or cultural context. By competing with one another, instead of participating in co-management, funding-driven organizations directly undermine the fragile processes of ACM (Banks and Hulme, 2012). These are all complex concerns that - given the increasingly competitive market for funds and projects - are likely to remain a factor in international non-profit efforts (Banks and Hulme, 2012). Discovering how these factors influence the cross-level collaboration in the Waodani SES is one of the main objectives of the present research. This is also one of the reasons why a comprehensive evaluation of NGOs operating in the SES has been explicitly included in the study.

2.6.7 The challenge of maintaining long-term participatory projects

Apart from the necessity to meet external demands in the increasingly competitive non-profit market, the short duration of projects is one of the challenging to implementing co-management in indigenous societies. Matasci et al. (2013) argue that projects often end at their planning phase because of the lack of financial resources to advance them. This is especially problematic because - as proponents of co-management state - a true multi-level collaboration requires often more than a decade to bear fruit (Armitage et al., 2009). Building trust and multi-scale relationships takes time, especially in the case of the collaboration between two very different worlds: on one hand, the external reality which is represented by government representatives, Western-trained managers, and researchers working for NGOs, and, on the other hand, the internal reality represented by indigenous people.

Again, therefore, the question of practicability arises. From the external perspective, both NGOs' precarious funding realities discussed above and the instability inherent in the political and economic context of developing countries render long-term co-management initiatives difficult to accomplish or justify (Goldstone et. al., 2005; Blanco and Grier, 2009; Banks and Hulme, 2012).

Given all these facts, most of NGO initiatives in developing countries rely on short and medium-term project-based funding (Banks and Hulme, 2012) and, in the case of state support, there is usually a "one-time influx of capital rather than a sustained source of revenue" (Bierbaum et al. 2013: 385). One of the reasons behind these "relatively conservative, win-win, and low-risk strategies" (Moser, 2009: 32) is an organizational reluctance to undertake any long-term project management and large-scale experimentation that might carry economic or political risks (Allen and Gunderson, 2011; Rist et al., 2013). On some level, this reluctance is understandable. Firstly, there are high costs involved in data collection and analysis, monitoring, hypothesis testing (Allen and Gunderson, 2011), and maintaining initiated processes (Bierbaum et al., 2013). Secondly, large and institutionally unstable SESs are slow in their response to lengthy and sustained interventions that may occur at various temporal and spatial scales (Allen and Gunderson, 2011). Given this reality, external actors might be

inclined to ‘play it safe’, which prevents developing management policies and strategies that would strengthen the indigenous SES’s adaptive capacity to respond to future uncertainties (Rist et al., 2013). Furthermore, external actors’ reluctance to commit themselves to long and potentially risky collaborative efforts creates doubts on the part of indigenous people that anything of lasting value can be achieved. Having learnt that external support can be severed at any time, local resource users can grow disheartened and cynical about the whole process (Holt et al., 2004).

Moreover, even if the State’s support and NGOs’ assistance can last for many years, such a scenario can also lead to its own set of problems. For instance, describing his experiences with a small First Nation community, Nadasdy (2005: 224) writes that “co-management processes represent a huge burden in terms of both time and labour in a village whose year round population consists of approximately 40 adult members”. In this context, “co-management processes of this sort might be preventing rather than fostering meaningful change by ensnaring participants in a tangle of bureaucracy and endless meetings” (2005: 224). Similarly, long traveling distances to scheduled meetings can present a considerable challenge in the case of sparsely populated communities residing on a large territory (Ostrom 1990, 2005).

All these concerns are relevant to considering ACM in the Waodani SES. This SES is remote and expensive to travel through, and most of its residents have very limited financial means (Kane, 1995). Therefore, one of the goals of the present research is to evaluate how financial, time and effort constraints as well as territorial and logistical factors can influence the Waodani’s participation in ACM initiatives.

2.6.8 Conflicting incentives and socio-economic preferences

A lengthy build-up to a fully functioning ACM initiative can also be undermined by competing incentives that indigenous people receive from economic activities in their territories (Narváez Quiñónez, 1996; Ziegler-Otero, 2004). For example, gold or oil resources lying in the subsurface of some indigenous communities can attract international companies that offer quick and often unsustainable benefits to local people (Bunker, 1988; Kane, 1995; Guaranda, 2010). Paid employment, access to the market, availability of gun technologies, and transportation options can accompany the process of industrialization of forest resources. Again, an impact of these factors on the implementation of ACM in the Waodani SES needs to be considered in the present study, especially since the historical data (Section 3.3) and the Waodani cultural values (Section 4.3.2) demonstrate their relevance. As it will be discussed in greater depth in Chapter 4, quick and easy availability of ‘modern’ goods and benefits fits the instant gratification mentality of hunters and gatherers, such as the Waodani people (Yost, 1981; Kane, 1995; Rival, 2002). Exploring the forest defines a way of living that is opposed to postponement in reaping benefits and favors instant

gratification or ‘immediate return’ economy (Woodburn, 1982). A short-discount rate - even if unsustainable in the long-term - can be culturally more attractive than a lengthy process of managing for resilience. As discussed in Section 4.3.1.2, such an approach to securing livelihoods has made the Waodani susceptible and amenable to the demands of externally-driven oil development (Bunker, 1988; Ziegler-Otero, 2004). Establishing whether it is still the case, especially given the recent socio-political changes described in Section 4.4, is one of the goals of this study.

2.6.9 ACM and immediate socio-economic needs

It might be misleading, however, to blame only cultural factors for indigenous communities’ preference for immediate benefits and instant gratification. There is also economic reality that needs to be taken into consideration when lengthy ACM initiatives are being implemented in traditional societies. Many of these societies are too impoverished to be able to afford any postponement of benefits and goods. They need money to buy things, and constant and extended efforts are required to obtain it. As Wilk (1996: 5) indicates, “because of poverty, indigenous peoples often do not have the time and the resources to engage in experimentation and innovation; when they do, they often lack the social organizations that can develop, disseminate, or market their technology”. Indeed, indigenous people are among the most disadvantaged segments of the world society. Although they make up only 5% of the world’s population, they constitute up to 15% of the world’s poor (Maru et al., 2012).

Therefore, immediate economic necessities add to the factors preventing indigenous people from embracing lengthy collaborative processes. Learning-by-doing, hypothesis testing, and collaborative reflection on experimental management approaches might be a luxury that some indigenous societies cannot afford. In support of this argument, Wilk (1996: 5) states that “[indigenous people] must often take opportunities for short-term gain, even when they know the consequence will be destructive or dangerous in the long term”. As Section 4.3 demonstrates, this has been, historically, the story of the Waodani SES’s thorny relationship with oil companies which have been engaging in ecologically and economically unsustainable practices in the SES (Rivas Toledo and Lara Ponce, 2001; Lara, 2007; Aviles, 2008). Therefore, the present study seeks to establish if the Waodani’s short-term horizon, which has been driven by their cultural script and livelihood necessities, will continue to trump or dominate over management concerns and collaborative efforts.

CHAPTER 3

THE STUDY AREA AND ITS CONTEXTUAL SETTING

3.1 INTRODUCTION

This chapter sets the stage for the study by getting the reader acquainted with the geographic and economic context of the research. It also provides an overview of the Waodani history from the pre-contact period to the current situation. Importantly, the chapter attempts to justify the study's focus on the Waodani SES by describing its importance in the context of the sustainable management of the Yasuni Biosphere Reserve.

3.2 THE WAODANI SES AND THE YASUNI BIOSPHERE RESERVE

3.2.1 The Waodani SES as a key component of the Yasuni Biosphere Reserve

The study area is located in the eastern part of Ecuador, a relatively small country with a territory of 256,370 km², including the Galapagos Islands (MAE, 2010). The eastern part of the country covers the central portion of the Ecuadorian Amazon. It contains some of the most bio-diverse primary tropical rainforest on the planet and is characterized by extraordinary cultural heritage (Finer et al., 2009; MAE, 2010). As a result, in May 1989, at the request of the Ecuadorian Government, UNESCO designated a portion of this region as the Yasuni Biosphere Reserve (YBR) (Finer et al., 2009). The YBR encompasses the Yasuni National Park (YNP), the contiguous Waodani Ethnic Reserve (WER)⁵, the Tagaeri Taromenane Intangible Zone (TTIZ) as well as the territories inhabited by Kichwa, Shuar, and colonists communities (MDG-F and MAE, 2008; Finer et al., 2009;). In 2011, the boundary of the YBR was extended to the south to include the intact rainforest of the Pastaza province within the indigenous lands of the Kichwa (WCS-UNESCO, 2011) (Figure 3.1).

⁵ In the thesis, I will be also referring to WER as the Waodani territory, since this is how it is commonly referred to in relevant literature.

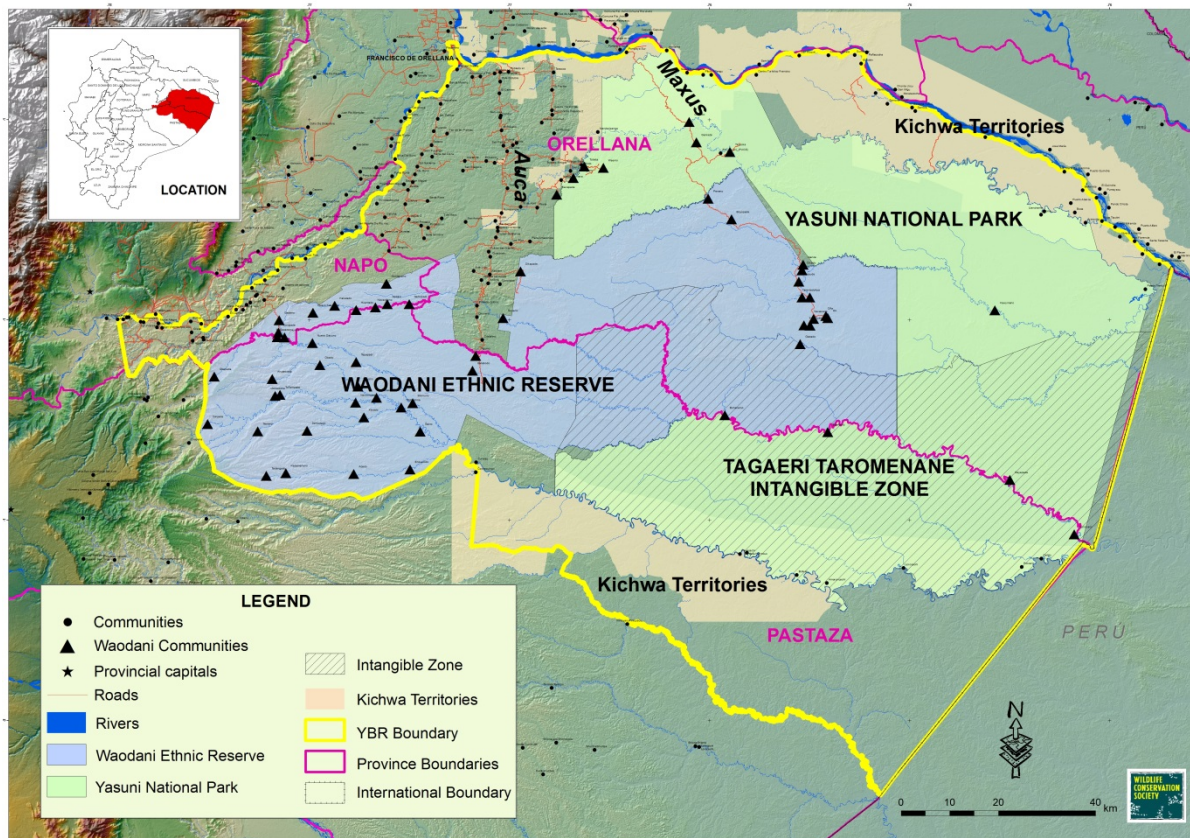


Figure 3.1 The map of the Yasuni Biosphere Reserve including the location of Waodani communities (Adapted from: WCS-UNESCO, 2011).

Historically, the Waodani inhabited the entire region of the YBR (Finer et al. 2009). Their ancestral territory spanned over the area of 20,000 km² of interfluvial lowland tropical forests between the rivers of Napo and Curaray (Rival, 1996; Boster et al., 2004; Holt et al., 2004; Beckerman et al., 2009; Finer et al., 2009) (Figure 3.2). Today, the Waodani's territorial limits have been reduced to approximately one-third of its original size and cover the area of 7000 km² confined to the legally recognized WER (Stocks et al., 2012) (see Figure 3.1). Despite its size reduction, the WER remains the largest indigenous territory in Ecuador (Rival, 2002) and is currently inhabited by thirty two Waodani communities (NAWE, 2012).

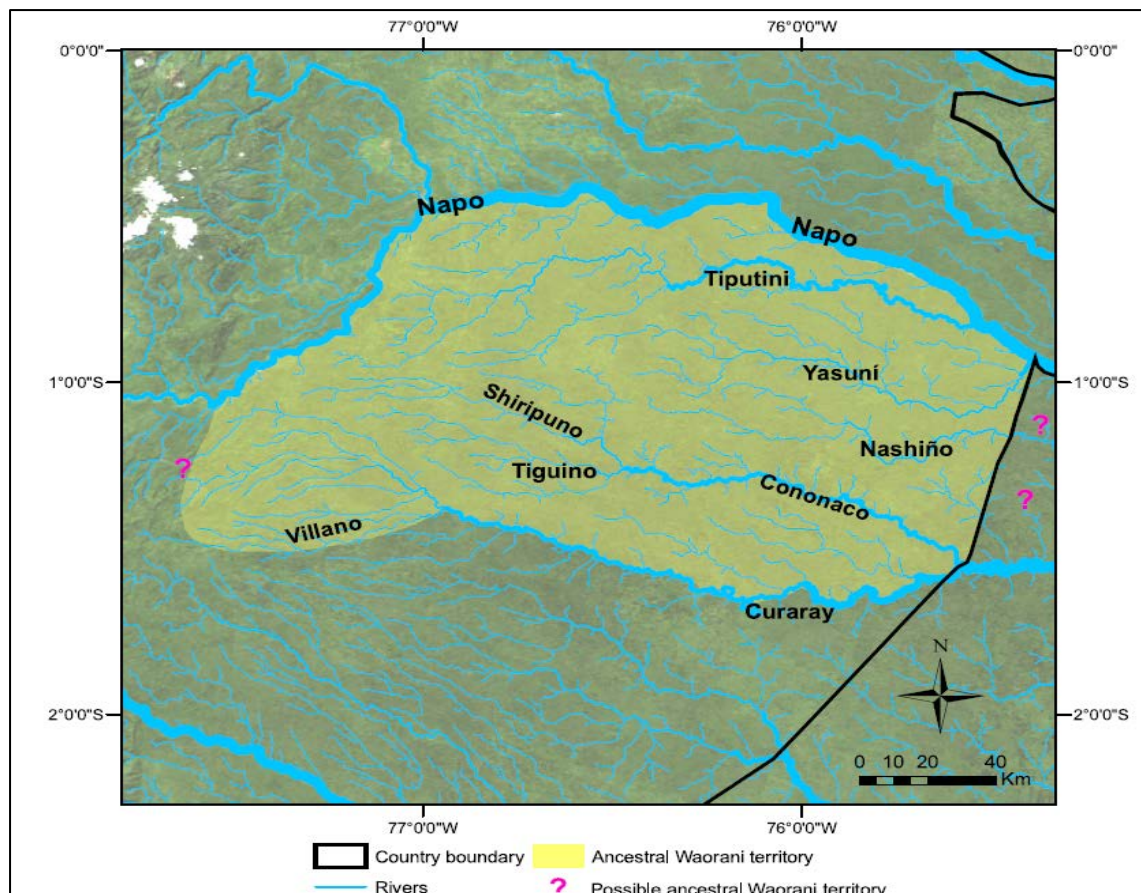


Figure 3.2 The map of Waodani ancestral territory (Source: Finer et al. 2009).

The Waodani are not, however, confined to their legally recognized WER, since eight communities are also located within the YNP (MAE, 2011b). Even though these communities are not permitted under the Ecuadorean law to obtain land titles within the YNP (Stocks et al., 2012), the Waodani are working with the Ministry of Environment to secure a co-management agreement (YNP's Director, pers. comm.). Three of these eight communities within the YNP - Guiyedo, Timpoka and Ganketa - already have territorial management plans (NAWE- Guiyedo, Timpoka and Ganketa, 2012), and these have been submitted for revision and approval to the Ministry of Environment (pers. obs⁶). In addition to the communities residing within the YNP, there are seven Waodani communities located near the Park's western border and in the proximity of the southern limits of the Auca road (see Figure 3.1). At present, they do not have any land title but they are in constant negotiations with the Ecuadorian Ministry of Environment to obtain legal territorial rights (YNP Director, pers. comm.). Consequently, even though the Waodani are not the most populous among the local indigenous groups, they are spread out throughout the entire landscape of the YBR. Altogether 3500 of Waodani are distributed among forty seven communities with different land rights which are located within

⁶ As a landscape ecologist for the Wildlife Conservation Society, I worked in the Yasuni region and directly with the Waodani communities and their representative organization for over six years (2007-2013).

YBR's core and buffer zones and on the border of the transition area (NAWE, 2012; WCS-UNESCO, 2011) (Figure 3.3).

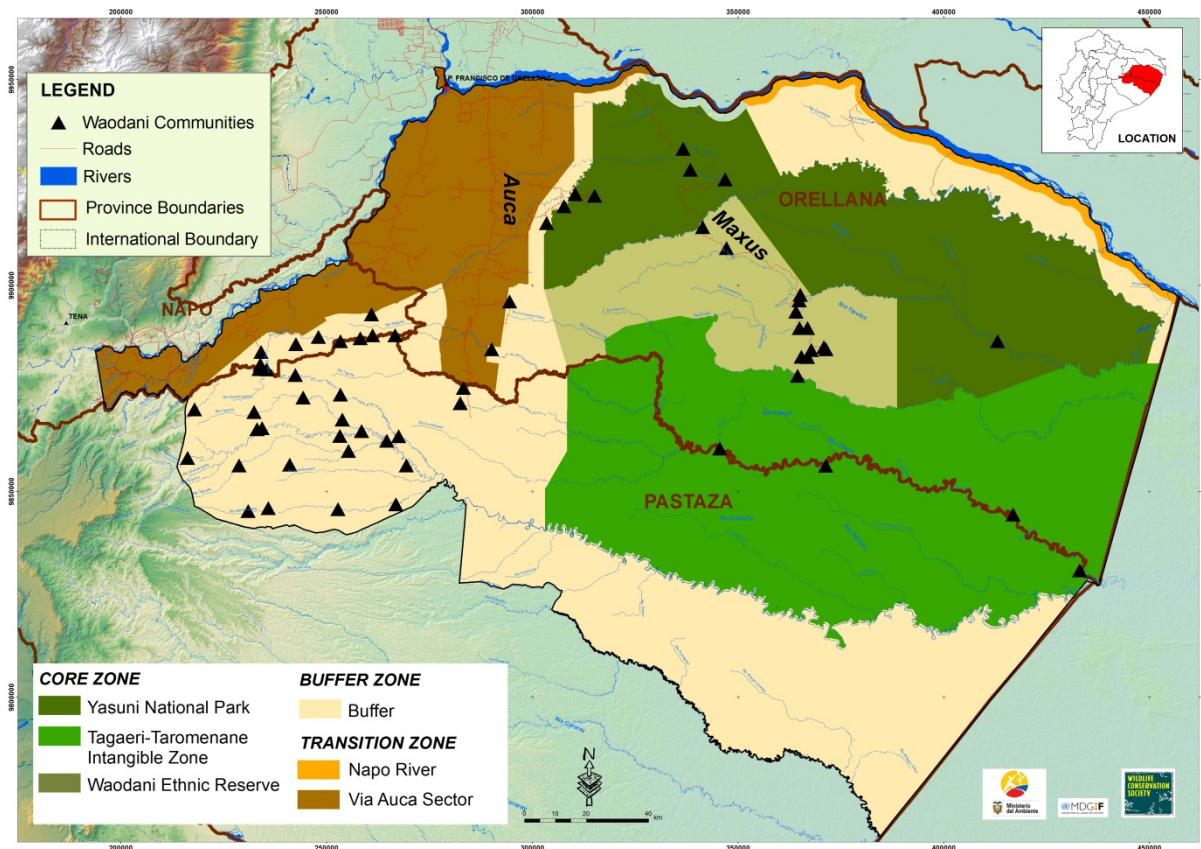


Figure 3.3 The map of Waodani communities within the zoning system of the Yasuni Biosphere Reserve: core zone in green, buffer area in light yellow and transition zone in brown (Source: WCS-UNESCO, 2011).

The widespread distribution of the Waodani within the YBR is a reflection of their perception of territory and sense of ownership over their ancestral land (NAWE, 2011). In 2011, the Waodani - in their proposal to the State for autonomous local government under Indigenous Territorial Circumscriptions (CTIs) (Section 4.4.1) - presented their territory (Figure 3.4) as they envision it in the future (NAWE, 2011). This territory would cover 17,400 km² and encompass the majority of the area that corresponds to the historical limits. Therefore, it is the Waodani's vision of their SES that is applied to the present study.

Overall, the only major difference between the YBR and the Waodani SES can be found in the western section. While the YBR encompasses the whole transitional area along the Auca Road, which extends as far as the Napo River and the western portion of the Waodani territory, the Waodani SES includes the Waodani communities located to the west of the YNP and at the southern portion of the

Auca Road. In the south, the limits of the Waodani SES are marked by the Curaray River⁷. The SES's northern border is, however, slightly modified from its historical shape and is limited by the Tiputini River, instead of the Napo River⁸, as it was in the past (Figure 3.4).

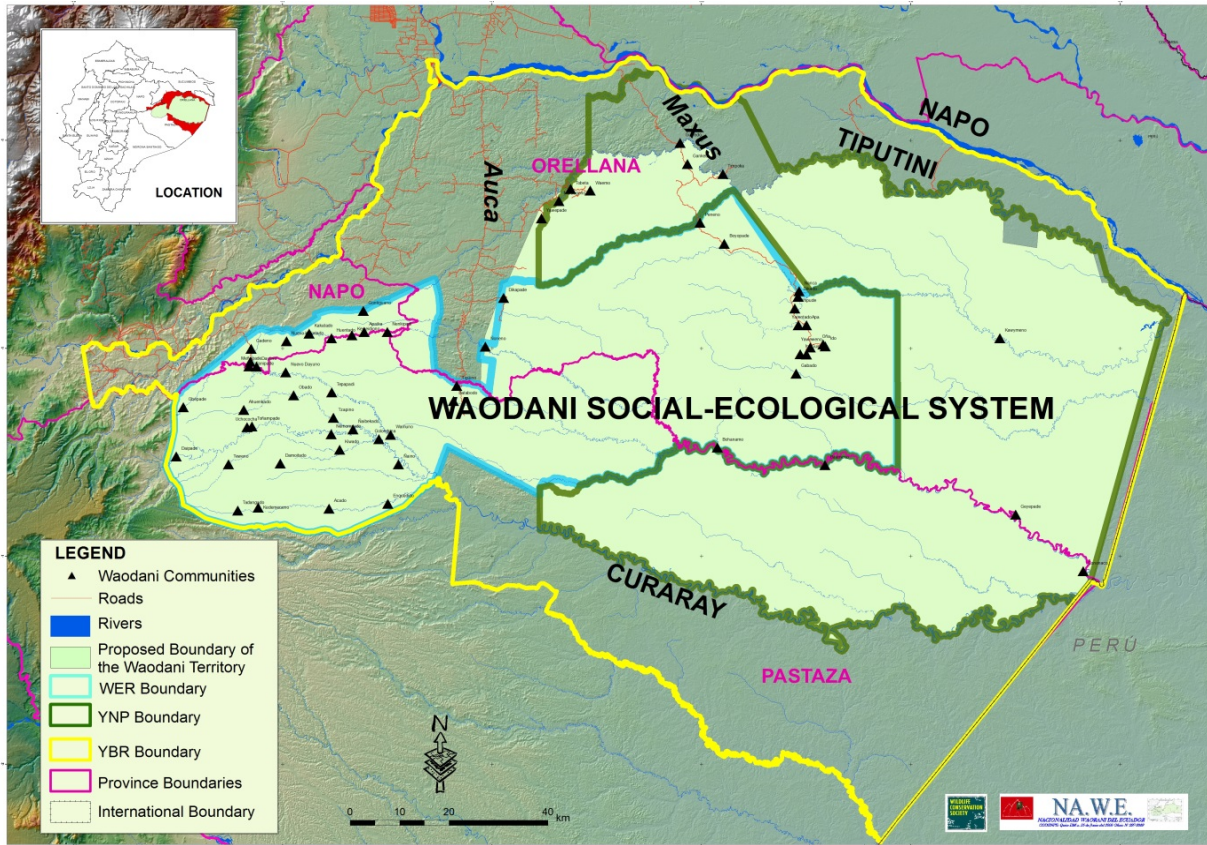


Figure 3.4 The area proposed by the Waodani for the extension of their territory which for the purpose of the thesis represents the Waodani Social-Ecological System (Adapted from: NAWA, 2011).

3.2.1.1 Bio-physical characteristics of the Waodani SES

The Waodani SES is home to an extraordinarily rich assemblage of species. The YNP itself has at least 204 species of mammals, including jaguars, tapirs, river dolphins, and giant otters, as well as 121 species of reptiles and 139 species of amphibians. There are over 610 species of birds and 268 species of fish in the Park (MAE, 2011b). Plant diversity is also incredibly high, with research indicating that one hectare of tropical forest harbors more trees and shrub species than the whole North America (MDG-F and MAE, 2008). The landscape is predominantly covered by non-inundated forest (also called *Terra firme*) alternating with small areas of two types of floodplain forests: a seasonally

⁷ The Curaray River also marked the original southern boundary of the RBY that was extended further south in 2011 (WCS-UNESCO, 2011).

⁸ The northern limits of the Waodani SES are defined by the most northern location of one of their communities (Guiyedo) that lies at the Tiputini River.

flooded forest known as a *Varzea* located near white-water⁹ rivers and flooded forests known as *Igapó* near black-water rivers¹⁰. There are also ecologically important areas of *Mauritia* palm swamps, where the surface is flooded most of the year (Sánchez et al., 2002).

The uniqueness of the YBR's landscape and climate is most likely responsible for such high animal diversity (Finer et al., 2009; MAE, 2011b). This extensive landscape ranges from 200 m to 500 m in elevation and is located at the crossroads of the Amazon, the Andes Mountains, and the equator (Finer et al., 2009; Bass et al., 2010). It is also characterized by the lack of defined seasonality, steady temperature (around 24-25°C), and high annual precipitation levels of approximately 3000 mm (MAE, 2010; MAE, 2011b).

3.2.1.2 Governance structure for management of the Waodani SES: description of the main actors

The Yasuni Biosphere Reserve encompasses Orellana, Napo, and Pastaza provinces, and has five municipalities and fourteen parishes¹¹ (WCS-UNESCO, 2011). Consequently, the Waodani SES (Figure 3.4) represents a dynamic system embedded within a complex socio-cultural, economic, and political environment. According to Fontaine and Narváez (2007), there are three main types of actors involved in the social-ecological management of the region: 1) hegemonic actors (public and private companies, central government and sectional organizations); 2) secondary actors (indigenous communities and organizations); and 3) strategic actors (NGOs). All of these actors have various levels of influence within the Waodani SES and play a key role in the governance of the region (WCS-UNESCO, 2011).

The main governance body within the YBR is the Yasuni Biosphere Reserve Management Committee (YBRMC) created in 2001 as a response to cumulating environmental, economic, and social pressures in the region (Villaverde et al., 2005). The creation of the YBRMC - officially recognized by the Ministry of Environment in 2008 - established a participatory space where representatives of all stakeholder groups in the region could gather to collaborate and search for collective strategies to manage and promote conservation efforts and sustainable development within the YBR, and, as a result, the Waodani SES. The YBRMC is led by the Ministry of Environment and is composed of regional and local governmental organizations, non-governmental entities including universities, private companies, civic society as well as community-based indigenous organizations (WCS, 2010;

⁹ White-waters are fast flowing rivers originating in the Andes with a high sediment load and rich in nutrients (Parolin, 2001) making soils of the *Varzea* forests fertile and suitable for agriculture (Sánchez et al., 2002).

¹⁰ Black-water are slow flowing rivers with little sediment load and high levels of acidity (Parolin, 2001) making soils of *Igapó* nutrient poor (Sánchez et al., 2002).

¹¹ Politically and administratively, Ecuador is divided into provinces, municipalities (cantons) and parishes (*parroquias*).

WCS-UNESCO, 2011; MDG-F and MAE, 2012). It thus represents a multi-level governance structure which requires analysis in evaluating the feasibility of ACM in the Waodani SES (Section 2.5.2).

3.2.1.3 Socio-economic developments within the Waodani SES and their significance

The Waodani SES has been the site of intensive oil exploration activities that have already exerted many negative socio-economic and ecological impacts on the region and people residing in it. There are currently six oil concessions operating within the Waodani SES (oil blocks: 14, 16, 17, 21, 55, 66)¹² and three of them are located in the YNP itself (MAE, 2011b, SHE, 2012) (Figure 3.5).

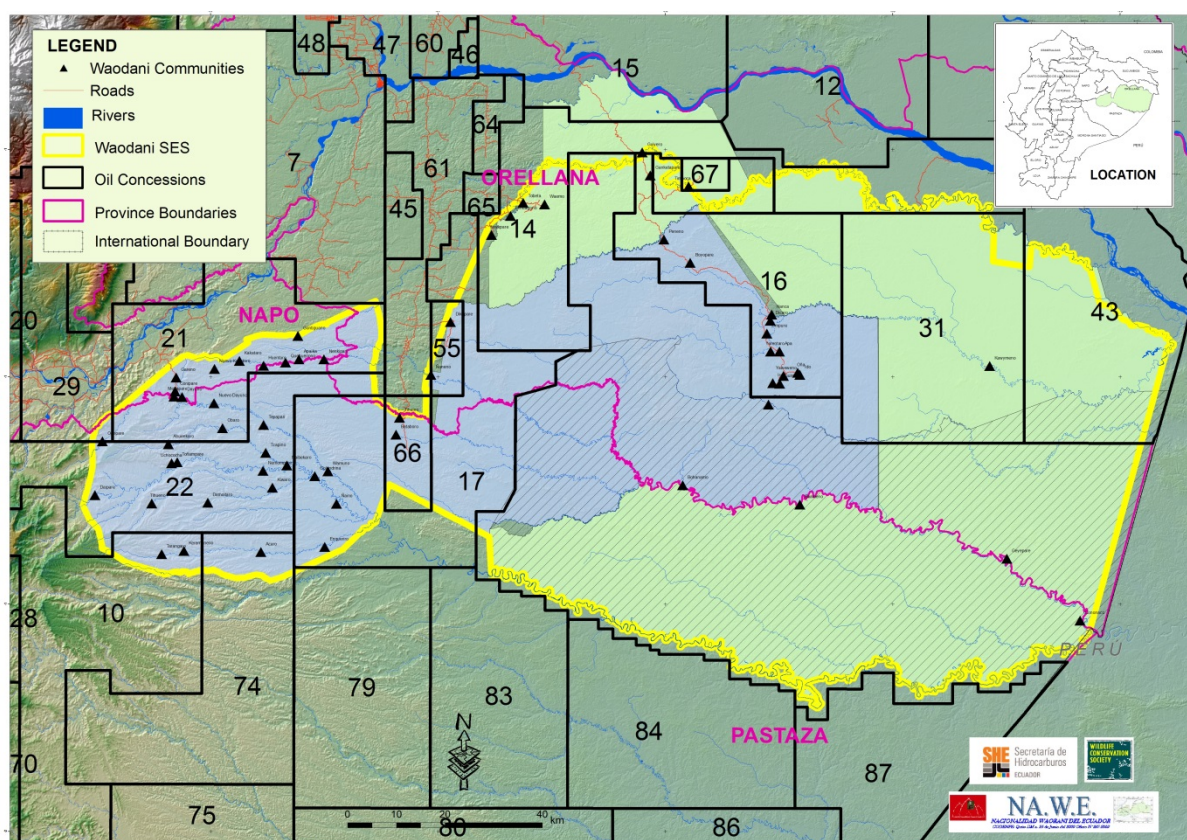


Figure 3.5 Map of current and proposed oil concessions within the Amazonian Ecuador (Source: WCS, NAWÉ and SHE, 2012).

In addition, in October 2013, oil drilling in the most eastern portion of the YNP - Ishpingo, Tambococha and Tiputini (ITT), denominated as block 43, and adjacent to it block 31 - was approved by Ecuador's National Assembly (Dudenhoefer, 2013). At the same time, there are more oil concessions currently being promoted in the Pastaza Province (e.g. block 22 in the WER) (SHE, 2012).

¹² The oil blocks 14 and 17 are currently operated by Petrooriental, block 16 by Repsol YPF, block 21 and 55 known as Armadillo Camp by Petroamazonas EP and block 66 by Petrobell (SHE, 2012).

Oil extraction in the region has already contributed to soil and water contamination and, indirectly, through road construction, to biodiversity loss, illegal timber extraction, and colonization and deforestation (MDG-F and MAE, 2008; Bass et al., 2010; Stocks et al., 2012). Furthermore, market integration has created a greater demand amongst communities for various products and services, which, in turn, has caused social problems, changes in family dynamics, and the unsustainable use of natural resources (Warnars, 2010).

Overall, therefore, given the size of the Waodani SES and its social-ecological and economic importance within the YBR, it has become imperative to address some of the challenges facing it. Ameliorating these challenges can enhance the sustainability of the Waodani SES and can also, by extension, help in conservation of the invaluable YBR as a whole.

3.3 A HISTORICAL OVERVIEW OF THE WAODANI SES AND ITS MAIN ACTORS

From the Western perspective, the historical record of the Waodani's SES can be divided into two periods (Yost, 1981; Rival, 2002): the pre-contact period of the 'traditional society' with the Waodani people being the only actor affecting the system, and the present post-contact period during which both the Waodani as well as the State, oil companies and NGOs have impacted on the SES. Table 3.1 provides a chronology of key historical events within the Waodani SES.

3.3.1 Pre-contact traditional society

In the pre-contact period, the Waodani formed a sparse population, with a density of approximately 0.025 persons per km² (Holt, 2005; Beckerman et al., 2009). They "constituted an isolated, territorially discrete, small scale and culturally and linguistically homogenous society" (Rival, 2002: 43). In terms of livelihood preferences, the Waodani were hunter-gatherers and horticulturalists (Yost, 1981; Kane, 1995; Rival, 2002). Using simple tools such as blowguns or spears, the Waodani hunted animals, mainly peccaries, monkeys and birds. They also gathered various fruits, nuts and other forest products, and, in their gardens (*chacras*), they cultivated a number of crops, including sweet manioc and plantain (Lu, 2001; Holt et al., 2004; Holt, 2005). However, unlike other indigenous groups who were engaged in horticulturalist activities, the Waodani did not attach much importance to cultivated crops as the principal source of their daily diet, and considered them a by-product of their unintentional management. Overall, they valued extractive activities associated with hunting and gathering much more than any form of agriculture. As a result, their engagement in cultivation was rather rudimentary and sporadic (Rival, 2002).

Their way of living was marked by vicious cycles of violent conflicts with one another as well as with outsiders, whom the Waodani called *Cuwodi* or *Cohouri* and considered them to be cannibals (Rival, 2002; Boster et al., 2004; Beckerman et al., 2009; Finer et al. 2009). These outsiders might have included indigenous people from another group, oil company workers, or colonists. In reality, *Cohouri* represented anybody from the outside world who tried to approach the Waodani or enter their territory and thus deserved to be speared to death (Boster et al., 2004). The violence among themselves was, in turn, motivated by animosity running high among individual clans. The Waodani separated themselves into *Huaomoni* (us [our clan]) and *Huarani* (others [not our clan]) who were considered potential enemies (Rival, 1996, 2002). Consequently, internal relations were characterized by hostility and permanent clan warfare, which resulted in the pre-contact Waodani having the highest homicide rate known to anthropology (Robarchek and Robarchek, 1998; Beckerman et al., 2009).

The traditional socio-political organization and lifestyle patterns of the Waodani were characterized by four main aspects. Firstly, the Waodani social organization was structured around a basic residential unit called a *Nanicabo* (Rival 1996, 2002; Holt et al., 2004). This thatch-covered longhouse, which housed between six to twelve extended families, was economically self-sufficient and autonomous (Robarchek and Robarchek, 1992; Rival, 1996; Lu, 2001; Holt et al., 2004; Section 4.3.2). Secondly, the political organization of the Waodani society that was formed around a *Nanicabo* was decentralized and egalitarian (Rival, 1996, 2002; Robarchek and Robarchek, 1992, 1998; Section 4.3.2). Thirdly, the Waodani's internal socio-economic subsistence pattern was based on demand-sharing (Rival, 2002; Section 4.3.2). Finally, the Waodani's constant fear of being attacked by either *Cohouri* or other clans of Waodani (*Huarani*) contributed to their dispersed settlement pattern and semi-nomadic lifestyle (Lu, 1999, 2001; Holt et al., 2004). Overall, being sparsely populated and characterized by high mobility, the Waodani did not exert major pressures on their ecological system. On the contrary, their semi-nomadic system allowed for the recuperation of depleted fauna and any other resources in the area they had previously resided (Lu, 2001; Holt et al. 2004).

3.3.2 Post-contact Waodani society

3.3.2.1 The Era of missionary influence (1958 - 1970s)

The year 1958 constitutes a 'breakthrough moment' in the history of the Waodani (see Table 3.1). It is when they established the first peaceful contact with missionaries from the Summer Institute of Linguistics (SIL) (Rival, 1996, 2002; Holt et al., 2004). This contact was followed by the establishment of the first permanent settlement known as Tihueno¹³ which, for the following 10 years,

¹³ The current spelling is Teweno.

became a place where a number of Waodani clans resided (Finer et al., 2009). In 1969, the SIL was authorized by the Ecuadorian government to establish a protectorate (protection zone or reservation) around its new mission-base in Tihueno in the southwestern portion of the Waodani's territory (Rival, 1996, 2002; Finer et al., 2009; Kimerling, 2012).

The creation of the Protectorate had a profound impact on the Waodani's socio-cultural functioning. Firstly, the traditional pattern of dispersed living was replaced with larger permanent settlements that were arranged around an airstrip or a school (Robarchek and Robarchek, 1992; Holt et al., 2004). Secondly, with the process of sedentarization, the need for a formal leadership representation emerged. Gradually, the traditionally egalitarian and individualistic culture incorporated community leaders that were elected during internal assemblies (Holt et al., 2004). Thirdly, the establishment of settlements took place along the rivers, and this riverine adaptation triggered profound changes in the Waodani subsistence patterns (Rival, 2002). Prior to the 'pacification', the Waodani had inhabited interfluvial forest located far from any large rivers and depended exclusively on hunting, gathering fruits and incipient horticulture (Rival, 1996). However, once they settled close to rivers, they intensified horticultural activities and incorporated fishing and collecting river turtles' eggs into their livelihood strategies (Rivas Toledo and Lara Ponce, 2001; Rival, 1996, 2002; Holt et al., 2004). Finally, the introduction of dogs and shotguns by missionaries transformed forever the Waodani's hunting habits. Apart from monkeys, birds, and peccaries, they could now hunt big mammals, such as tapir, and could hunt for them in greater numbers and with greater efficiency (Rival, 1996, 2002). These changes in hunting methods initiated the beginning of the disruption in the pattern of the resource sustainability that had historically governed the relationship between the Waodani and their forest (Yost, 1981).

The legacy of SIL missionaries is also evident in *el modelo asistencialista* -'asistencialista' model which refers to dependence on others - that has impacted on the life of the Waodani until present times. The previously fiercely independent and self-reliant Waodani turned into passive receivers of goods and services provided to them by missionaries and then by other outsiders (Rival, 2002). The access to foreign 'treasures' led to forming a relationship based on dependency where new needs were created and inequality promoted (Kimerling, 2012). All this, in turn, utterly modified the power structure within the Waodani society (Yost, 1981; Rivas Toledo and Lara Ponce, 2001). Egalitarianism that characterized these indigenous people for many centuries slowly began to give way to a system in which those with Spanish language skills and the ability to obtain goods from foreigners became more powerful and respected (Yost, 1981; Ziegler-Otero, 2004; Kimerling, 2012). In the era when the richness of the forest could be supplemented with pre-packaged foods, shotguns, and manufactured tools, those familiar with the outside world became indispensable (Yost, 1981).

Table 3.1 The chronology of selected political, economic and social key events that influence the Waodani SES (Adapted from: Finer et al. 2009).

Year	Event
Pre-Contact	
Until 1950s	Approximately 500 Waodani inhabited the territory of 20,000 km ² that extended between Napo River at the north and Villano and Curaray Rivers at the south.
Post-Contact	
The era of missionary influence	
1956	Five American evangelical missionaries from the Summer Institute of Linguistics (SIL) are killed by the group of Waodani during their first attempt to establish contact with this nationality.
1958	First peaceful contact with the Waodani is established by SIL.
1958-1968	Tihueno becomes the first permanent settlement where contacted Waodani members live.
1969	The SIL is authorized by the Ecuadorian government to establish a 'Protectorate' around Tihueno in the southwestern portion of the Waodani's land for the permanent relocation of other individual clans.
1969-1972	Three remaining uncontacted Waodani groups are relocated by SIL to Tihueno.
1969	The Waodani group in the Protectorate suffers a deadly polio epidemic after the arrival of third Waodani group.
1975	The creation of other permanent settlements by Waodani leaving Tihueno.
The era of oil industry dominance	
Early 1970s	Oil exploration resumes in areas recently vacated by relocated Waodani.
Nov 1979	Yasuní National Park (YNP) is created.
Early 1980s	Texaco constructs Auca road and first oil production sites in ancestral Waodani territory.
1980s	Ecuador leases out oil blocks covering the northern section of Yasuní National Park.
1983	Ecuadorian government grants Waodani a land title for 660 km ² of the Protectorate.
1986	Oil exploration in Block 16 (within YNP) is initiated by the American oil company Conoco
1989	Yasuní National Park with its surrounding areas and the entire ancestral Waodani territory is declared the Yasuni Biosphere Reserve by UNESCO.
1990	The size of Yasuní National Park is reduced in order to permit oil extraction
Mar 1990	First Organization of the Nationality Huaorani of the Ecuadorian Amazon (ONHAE) is created.
Apr 1990	The Waodani Ethnic Reserve (WER) with the area of approximately of 6126.5 km ² is created
1991	The oil exploration activities in Block 16 are taken over by Maxus Ecuador Inc, that also assumes operations of the Bogi-Capirón y Tivacuno oil camps.
1992	Yasuni National Park's area is enlarged to its current size and shape.
1992-1995	New oil access roads into the Yasuní National Park and Waodani Reserve are constructed by the Maxus oil company.
1993	Migration of the communities from Protectorate and Waodani Ethnic Reserve towards the Maxus Road (Block 16).
Aug 1993	The 20-year agreement known as the "Agreement of Friendship, Respect and Mutual Support" is signed between ONHAE and the oil company Maxus Ecuador Inc. (later bought by the Spanish company Repsol-YPF).
1999	Consortium of Repsol-YPF assumes the oil operating activities in the Block 16.
1999	The Intangible Zone for the group of Tagaeri-Taromenani is created.
2000	Petrobell Inc. Grantmining S.A starts its operation in the marginal camp of Tigüino.
Jul 2002	The first Management Plan of the Waodani Territory is elaborated.
Sept 2005	Illegal usufruct agreement with American company Eco-Genesis that gives this company exclusive rights to 700 hectares of the Waodani's ancestral land is signed by the ONHAE President.
2005	The Association of Waodani Women of the Ecuadorian Amazon (AMWAE) is formed.
2006	First Strategic Plan of Waodani Nationality (Plan Estratégico de Vida de la Nacionalidad Waodani) is elaborated by ONHAE with the support of the Brazilian oil company Petrobras.
Jan 2007	The Intangible Zone is officially demarcated.
Sept 2007	The collaborative agreement between WCS and ONHAE/NAWE is signed under the USAID-financed "Integrated Management of Indigenous Lands" (IMIL) Project (2007-2011).

May 2008	The first NAWE technical and community guards group is formed and trained by WCS.
Dec 2007	ONHAE is renamed to Nationality Waodani of Ecuadorian Amazon (NAWE).
2008	The creation of Waodani Organization of Napo (ONWAN) with its office in Tena and Waodani Organization of Orellana (ONWO) with its office in Coca.
Dec 2008	Waodani territory physical demarcation is completed.
<i>The era of the State influence</i>	
Sept 2008	The new Ecuador Constitution is approved
Oct 2008	First community mapping efforts of the Waodani territory are led by NAWE technical group (with WCS assistance).
2008-2013	Eight Waodani communities have their land use zoning and internal resource use regulation developed.
Nov 2008	The YBR Management Committee is officially recognized by the Ministry of Environment
Dec 2008	The Socio Bosque (Forest Partners) Program is launched by the Ecuadorian government.
Jul 2010	The revised Law of Hydrocarbons is passed.
Oct 2010	Organic Code for Territorial Organization, Autonomy, and Decentralization (COOTAD) is passed.
Jul 2011	The YBR Management Committee statutes are legalized by the Ministry of Environment
Aug 2011	The first representatives of the Waodani are officially incorporated into the YBR Management Committee's board of directors and Manuela Ima (president of AMWAE) is elected as a representative of Civic Society within the Committee.
2011	First official zoning of the YBR led by UNESCO and MAE with WCS assistance is proposed and approved by SENPLADES.
May 2011	The first Waodani community of Kiwado joins the MAE's Socio Bosque Program.
May 2013	Four Waodani communities (Kiwado, Damointado, Teweno, Tzapino) are within the Socio Bosque program with the total conservation area of 840 km ² and the total yearly annual incentive of \$115,200.
2011-2013	First Waodani internal community management plans developed for Kiwado, Damointado, Teweno and Tzapino by NAWE technicians with WCS support.
Jul 2012	First community management plan developed for the Waodani communities of Guiyedo, Timpoka and Ganketa within the Yasuni National Park in collaboration with the Ministry of Environment (awaiting for the final approval).
Mar 2012	The new version of revised NAWE statutes is presented to government institution of Development Council of the Nationalities and Peoples of Ecuador (CODENPE).
Sept 2012	The organization of Council Of Waodani Nationality of Pastaza (CNWP) with its office in Puyo is created.
Nov 2012	The 11th round of oil concession auctions is called by MNRNR to promote oil exploration activities in Morona Santiago y Pastaza (it covers 16% of the Waodani territory).
May 2013	First oil exploration seismic activities in the Waodani communities of Pastaza.
Aug 2013	The Yasuni-ITT initiative is abandoned by the Ecuadorian State.
Oct 2013	The oil drilling in blocks 43 (known as Yasuni-ITT) and 31 was approved by the Ecuador's National Assembly.

3.3.2.2 The era of oil industry dominance (1970s - 2008)

If the contact with the missionaries led to the first wave of changes in the Waodani society, the opening of oil exploration in the Ecuadorian Amazon in the late 1960s and early 1970s and its intensification in 1980s deepened those changes (Rivas Toledo and Lara Ponce, 2001; Valdivia, 2005). In the early 1980s, the U.S. oil company Texaco constructed the first road called Auca, which entered the heart of the ancestral territory of the Waodani. This was followed by the construction of another major road, known as Maxus, that cut through the YNP into the WER (Finer et al., 2009) (Table 3.1, Figure 3.4). Suddenly, the previously useless and inaccessible Waodani territory attained a potential for being one of the engines of economic development of the country (Lara, 2007).

During those times, the Ecuadorian State was, however, almost completely absent. Its primary goal was to maximize its economic resources by promoting oil development, regardless of its impact on the environment or indigenous people's livelihoods (Lara, 2007; Kimerling, 2012). In essence, despite its interest in oil revenues, the State was neither willing to assume any responsibility for the Waodani nor did it intend to act in any protective capacity (Rivas Toledo and Lara Ponce, 2001). Having been abandoned by the State, the Waodani decided to form their own leadership body in order to negotiate their interests with oil companies. As a result, in March 1990, the first central leadership organization of the Waodani people - Organization of the Nationality Huaorani of the Ecuadorian Amazon (ONHAE) - was created (Rival, 2002; Ziegler-Otero, 2004; Lara, 2007; Stocks et al., 2012). The establishment of this representative organization was the Waodani's first organized response to oil exploration taking place in their lands (Ziegler-Otero, 2004; Lara, 2007). Importantly, however, the creation of ONHAE was also beneficial for the oil company Maxus Energy Corporation¹⁴ which started to operate Block 16 located within the northern portion of YNP and WER. It could be argued that it was advantageous for the oil company to have only one negotiating partner or "organized social actor" (Narváez Quiñónez, 1996: 91) than to deal separately with all individual and highly egalitarian communities (Ziegler-Otero, 2004).

The evolving relationship between the oil companies and the Waodani was officially recognized in 1993 when the oil company Maxus (later bought by the Spanish company Repsol-YPF) signed the 20-year agreement known as the "Agreement of Friendship, Respect and Mutual Support" with ONHAE. In exchange for the rights to carry on oil exploration within the Waodani's territories, the company agreed to assist the nationality in such areas as health, education, and community development (Ziegler -Otero, 2004; Lara, 2007). In 2007, ONHAE was renamed NAWA (the Nationality Waodani of Ecuador) (Stocks et al., 2012) which remains today the central leadership structure of the Waodani people and continues its relation with the Repsol-YPF under the agreement signed by ONHAE. The role of NAWA and its structure is described in Box 1.

¹⁴ In 1992, the Maxus Energy Corp started to operate Block 16 that covered the northern portion of YNP and WER. The 140 km long Maxus road allowed the company to access oil fields within this area. In 1995, the Argentinian company YPF Ecuador S.A. bought Maxus that was then taken over in 1999 by Spanish oil and gas company Repsol, making Repsol-YPF current Block 16 manager (Peterson, 2010; Entrix-Cardno, 2012).

Box 1: NAWÉ – political representation of the Waodani people (Source: NAWÉ Statutes, 2012; Asamblea 2010; Asamblea 2008, pers.obs)

The Nationality Waodani of Ecuador (NAWE) is the political representation of the Waodani people in Ecuador recognized officially by the State in 2007. With its recognition in 2007, NAWÉ replaced Organization of the Nationality Huaorani of the Ecuadorian Amazon (ONHAE) that was created in 1990. NAWÉ represents forty seven communities located within the Waodani Ethnic Reserve and the Yasuni Biosphere Reserve in the Orellana, Pastaza and Napo Provinces at the national and international level. All other Waodani organization or associations fall under the NAWÉ representation. Consequently, NAWÉ's role is to supervise and coordinate the activities of the Waodani regional organizations including Waodani Organization of Orellana (ONWO), Waodani Organization of Napo (ONWAN), Council of Waodani Nationality of Pastaza (CNWP); local Associations of Keweriono and Bamenó as well as Association of Waodani Women of the Ecuadorian Amazon (AMWAE).

NAWE Statutes (on the base of which ONHAE was recognized by State) were redefined in 2011 and constitute internal nationality regulations and by-laws. NAWÉ works to defend the human rights of the Waodani, defend and consolidate Waodani territory, generate resources for economic development activities within Waodani territories, and maintain the culture and traditions of the Waodani. Currently, it coordinates with the State all the aspects related to the health, education, conservation, local development and the protection of the isolated group of Taromenane Tagaeri.

NAWE is directed by a board of directors or governing council (*Consejo de Gobierno*) elected by the Waodani people every three years during the Assembly (*Asamblea*). The board of directors is composed by the President, the Vice-President, the Director of the Territory and Natural Resources, the Director of Health, the Director of Education and Culture, The Director of the Gender and Family, the Director of the Tourism and the Director of Organization and Communication.

Until August 2013, NAWÉ key personnel and its activities were financed primarily by the Repsol-YPF under the 20-year agreement known as the "Agreement of Friendship, Respect and Mutual Support". Currently NAWÉ is negotiating the continuation of financial support from the Repsol-YPF. Furthermore, according to the new Constitution 2008 (Art. 275) and the law of COOTAD (Art. 93), the Waodani territorial rights can be recognized under 'Indigenous Territorial Circumscriptions'. This, in turn, would allow the nationality to have its own local autonomous government that can directly receive and administer funds allocated by the State to promote development projects (See Section 4.4.1).

Oil exploration activities officially accepted by the Waodani under the 20-year agreement and the Ecuadorian State's delegation of social responsibilities to foreign-owned private companies have had a profound social-ecological impact on the Waodani SES (see Section 4.2). Apart from causing ecological degradation and contributing to disruptive migration trends and overpopulation, the oil industry introduced the market economy into this indigenous SES (Rivas Toledo and Lara Ponce, 2001). The introduction of the market economy increased the Waodani's access to goods and services, but it also intensified illegal wildlife trade (Suarez et al. 2009, 2012), illegal logging (MDG-F and MAE, 2008) as well as contributed to alcoholism (Enrix-Cardno, 2012) and negative changes in the Waodani's dietary patterns (Lu and Sorensen, 2013). Furthermore, with the oil companies' being the sole provider of goods and services, the Waodani's dependence on external actors increased, leading to the deepening of the changes introduced by missionaries with *el modelo asistencialista* and discussed at greater depth in Section 4.3.1.2.

3.3.2.3 *The era of State influence (2008 - present)*

The Ecuadorian State, which, as argued above, had been absent in the Amazon region in the early stages of oil exploration (Lara, 2007; Izko Gaston, 2012) has become much more active in the last couple of years. With the implementation of the new Constitution in 2008 - along with new models of development based on political decentralization and revised hydrocarbon laws (Acosta, 2008; Asamblea 2008; Asamblea, 2010; Walsh, 2010; Guaranda, 2010; Torres et al. 2011) - relations between the State, the oil industry, and the Waodani have been redefined (see Chapter 4). Changes introduced with the new constitution as well as other political and territorial management developments in the YBR could be argued to offer the Waodani greater opportunities in terms of political and economic self-determination, lessen their dependence on oil companies, and provide them with incentives for collaboration with the State and other external entities.

Finally, the last few years have also been the time of greater and more diversified collaboration between NGOs and the Waodani people. This has been demonstrated, for example, through the relationship between these indigenous people and NGOs on such issues as building institutional and technical capacities, promoting alternative livelihoods, and assisting the Waodani in participating in the Socio Bosque program (de Koning et al., 2011; see Table, 3.1; Chapter 4).

Still, despite a number of positive changes in regards to multi-scale collaboration brought on by the political and legal changes as well as by NGOs' more pronounced presence in the region, oil exploration continues unabated in the SES. For instance, in November 2012, Ecuador's government called for the 11th oil-licensing round (*La XI Ronda Suroriente Ecuador*) of concessions in the pristine indigenous lands of the Pastaza, Morona Santiago and in some portions of Orellana Provinces (Petersen, 2012, SHE 2012). As already mentioned in Section 3.2.1.3, more concessions are planned in the future, with blocks 31 and ITT (43) already approved for exploitation. Overall, therefore, this is a period of uncertainty that could bring both opportunities as well as challenges to the Waodani SES. Exploring this uncertainty in the context of these opportunities and challenges is one of the goals of the present study.

CHAPTER 4

AN ANALYSIS OF SOCIAL-ECOLOGICAL CHALLENGES AND BARRIERS AND THE RATIONALE FOR CONSIDERING ACM IN THE WAODANI SES

4.1 INTRODUCTION

Building on the previous chapter, in this chapter, major social-ecological problems and changes facing the Waodani SES are presented and discussed. The purpose of the discussion is to demonstrate that the State's past reluctance to assist the Waodani in managing their SES and the relegation of this into the hands of the externally-controlled oil industry have been detrimental to the well-being of local people and their natural resources. The chapter demonstrates how a number of social-ecological problems have manifested themselves as traps underlain by several barriers that make them very difficult to escape. These barriers originate from both within the Waodani society and the external stakeholders involved in the region. The chapter then goes on to argue that the precarious state of the Waodani's SES requires taking advantage of a temporary window of opportunity that could facilitate the implementation of ACM and help in transitioning the SES into adaptive governance.

4.2 SOCIO - ECOLOGICAL MANAGEMENT PROBLEMS WITHIN THE WAODANI SES

As argued in Section 2.3.2.1, the presence and awareness of pervasive problems often constitute a prerequisite for motivating resource users to consider a management approach that aims at building resilience and adaptive capacity into the system. Both the adaptive cycle heuristic (Section 2.3.1) and the resilience thinking behind ACM (Section 2.4.1) propose that awareness of a crisis could act as a catalyst for initiating action. In the case of the Waodani SES, social-ecological challenges are both profound and long-standing in nature, which could potentially render the region suitable for the implementation of a resilience-based management approach.

4.2.1 Environmental and health problems

Oil exploration taking place in the Waodani SES has directly contributed to both soil and water contamination. According to the baseline survey report for the YBR funded by the MDG Achievement Fund and the Ecuadorian Ministry of Environment, rivers that enter the YNP have contamination levels that are 60 times higher than the levels deemed suitable for humans in the European Union. These rivers have been found to carry hydrocarbons that pose carcinogenic and other risks to indigenous people.

Frequent oil spills are the main environmental problems resulting from oil exploration. Within just four years (2004-2007), there were 399 oil spills with the total volume of 11.587 oil barrels spilled in

the region of the Auca road. In 2003, the frequent oil spills affected the Tiputini River and extended as far as 40 km within the Yasuni National Park (MDG-F and MAE, 2008). More recently, in 2013, the 420, 000 gallon spill affected the Napo river in the Yasuni National Park. Consequently, the spill left many indigenous peoples along the Napo River and its tributaries without drinking water, endangering, at the same time, their food supply (Amazon Watch, 2013). Waodani technicians from NAWE indicated that almost all the water within the Yasuni Biosphere Reserve, with an exception of the Curaray River, is contaminated to some degree by the oil activities. Indeed, many Waodani complain that they cannot consume fish because they get stomach aches and digestion problems (MDG-F and MAE, 2008). The Tiputini and Yasuni rivers appear to be the most contaminated. They are followed by the Nushiño, Indillama, Tivacuno, Pindovacu rivers and rivers around the city of Coca (Blanco, Aguajal, Huamayacu, Yanayacu and Jivino rivers) (Bryja, 2009).

The contamination of water and soil due to oil spills has been responsible for a number of health-related problems. The rates of miscarriages and cancer are much higher in the areas affected by oil activities. In additional, the mortality rates in those areas are 260% higher than in the city of Quito. Moreover, the rivers which have much higher levels of contamination (higher than the accepted limit for human consumption) are responsible for many cases of skin infections, irritation of eyes, persistent headaches, diarrhea, and gastritis among the local population (Izko Gaston, 2012).

In addition to oil spills and, resulting from them, contamination of natural resources, road construction undertaken to facilitate oil exploration has also brought about detrimental ecological and health-related consequences. Firstly, it has led to biodiversity loss, illegal timber harvesting, and colonization and deforestation (MDG-F and MAE, 2008; Bass et al., 2010; Stocks et al., 2012). For instance, since the construction of Auca road in the early 1980s, forty percent of the surrounding forest cover has been lost (Suárez et al., 2012). Overall, between 1970 and 1990, the forest cover fell from 100% to 59% in the Auca Road area that had been open to oil exploitation and colonization (Bilsborrow et al., 2004). Additional research indicates that since 1990 the deforestation has led to an additional loss of 30% of the forest cover (Izko Gaston, 2012). It is important to mention, however, that the area around Maxus road has experienced only 4% of deforestation within the same period of time due to Repsol - YPF's strict access control of the Maxus road, which helped in keeping non-indigenous colonists out of that oil concession (WCS, 2010). Still, the indigenous population already settled within the area is growing and once it becomes more integrated into the market economy, it will exert higher pressures on the forest resources (See Suarez et al., 2009, 2012). This prediction is warranted, since it is estimated that the Waodani population in the communities along the Maxus road increased almost eight times between 1993 and 2011, from approximately 55 to 400 members. Part of this increase is due to the Waodani migrating there in search of employment and easier access to the market (Entrix-Cardno, 2012).

This easier access to the market resulting from the road construction has already impacted on the animal abundance in the region. For example, the Maxus road and the area around it are used by the Waodani to facilitate commercial hunting, which, in turn, threatens wildlife sustainability. According to Suarez et al. (2009, 2012) unlimited hunting exacerbated by greater access to more lethal hunting technologies has turned the forest around the Maxus road into an 'empty forest'. Animals are hunted in an excessive amount, transported by the road, and sold at the Pompeya market which is located at the entrance of the Maxus road. The increased participation in the market economy - coupled with technological changes - has shifted Waodani's way of living from subsistence to commercial and profit-generating activities (Suarez et al., 2009).

As the Waodani livelihood strategies shift away from subsistence hunting and fishing towards commercial activities, serious health-related consequences become more prominent. According to Lu and Sorensen (2013), the Waodani are one of the indigenous groups most vulnerable to malnutrition because of the low intake of iron due to declining food availability and the decreased involvement of men in subsistence hunting and fishing. A study conducted by Houck (2013) in the community of Gadenó (Gareno), whose residents live in a close proximity to the markets and are engaged in oil-related employment, showed elevated rates of chronic malnutrition among children and adolescents as well as the prevalence of stunting ranging from 42 to 60 percent. In addition, by replacing their traditional diet with pre-packaged food products found in the markets, the Waodani have become more susceptible to obesity that had been previously rare in their communities. Gadenó, for instance, has obesity rates ranging from 11 to 16 percent in 2 to 18 year-old age group (Houck, 2013).

Overall, therefore, ecological and health-related consequences of the pressure exerted on the ecological integrity of the region have been both adverse and significant. The Figure 4.1 shows the intensity of the pressure to which the Waodani SES has been subjected as the result of commercial hunting, river and soil contamination, colonization, and associated with it deforestation and illegal logging.

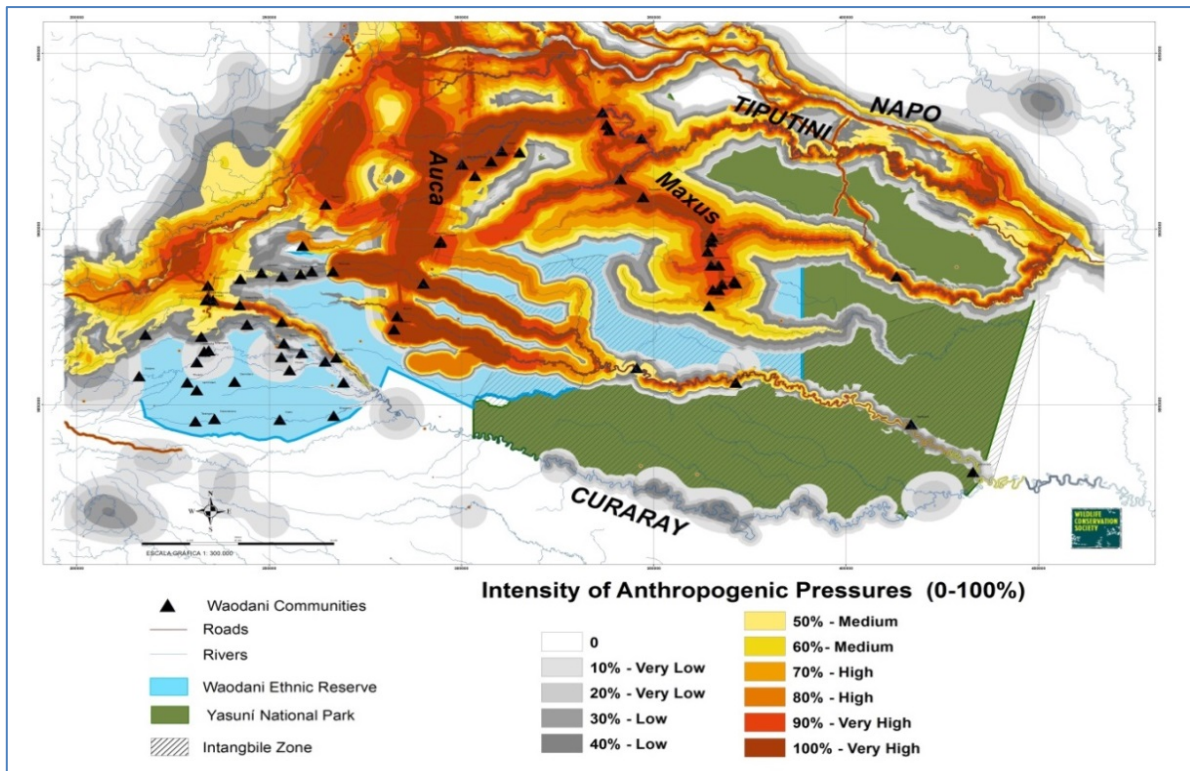


Figure 4.1 The intensity of anthropogenic impacts within the YBR: from red (the most intense) through yellow to light gray (low) (Source: Bryja, 2009).

The highest impact on the region's biodiversity is evident in the northwestern portion of the region that is characterized by a high network of transportation routes. The area of Maxus and Auca roads, as already discussed, is characterized by high rates of commercial hunting and high levels of colonization and deforestation. The rivers, in addition to providing accessibility to an extended hunting area, also serve as transportation routes for illegal loggers (Bryja, 2009).

All these developments indicate that the Waodani SES has been seriously impoverished in terms of its overall ecological potential. Furthermore, the scale and intensity of externally determined activities – mostly related to oil exploration – have undermined the connectedness or controllability of the system, resulting in it “being caught by whims of external variability” (Holling, 2001: 394). Therefore, with potential and connectedness being low, there is a possibility that the Waodani SES has, indeed, fallen into a poverty trap.

4.2.2 Socio-economic problems

In terms of income and economic status of the Waodani, there is a relative lack of data across the whole SES. Overall, however, the level of poverty in the Ecuadorian Amazon did not decrease between 1995 and 2006, and approximately 60% of population lives under the poverty line, which is much higher than in the Coast (36%) and the Sierra (41%) (Narváez, 2009). According to the Preface

of the revised Hydrocarbons Law (2010), the Amazon region is the most impoverished part of the country (Izko Gaston, 2012). Furthermore, especially high levels of poverty are found among the indigenous groups, the Waodani being one of them. This sub-section of the population has the overall level of poverty of about 70%, which is more than twice the level for white residents of the Amazon region (33%) (Narváez, 2009).

In addition, according to the socioeconomic survey conducted by Entrix-Cardno (2012), the 37% of the job opportunities available to the Waodani are provided by the oil companies, 24% by other private companies, and 3% by the State. Unfortunately, employment provided by the oil industry is temporary and usually does not last more than 3 months. Contracts provided by NGOs and universities, such as WCS and the Yasuni Scientific Research Station, are also tied to the duration of a given project or specific activities (e.g., working as guides for visiting researchers) and do not offer a permanent source of income (Entrix-Cardno, 2012; pers. obs.). With few options to find permanent professional jobs but with disposable cash on hand from short-term oil-related employment, many frustrated Waodani are turning to alcohol (Sánchez, 2010) or drugs (pers. obs.).

Due to limited income generating opportunities, the sale of bushmeat remains an important source of income for some local people. Limited information is available on the magnitude of this income; however, it is estimated that around 10 tons of bushmeat were sold per year in the Pompeya market over a 5 year period, generating an income of approximately \$20,000/year for the Kichwa, Waodani and colonist hunters from the region. It is estimated that the Waodani received 44.5% of this income (Suarez et al. 2009). Still, income from these activities tends to be concentrated in the hands of relatively few hunters in each community and, in most of the cases, is spent on alcohol, technological gadgets and other city-related activities, and thus does not contribute to household needs (Entrix-Cardno, 2012; pers. obs.). Furthermore, given its impact on wildlife populations, commercial hunting will not be able to provide sustainable and long-term income for local populations (Suarez et al. 2009).

Furthermore, the market economy in conjunction with the intensification of oil exploration might have exacerbated problems related to alcoholism and domestic violence (Sánchez, 2010). In some communities, such as Gadeno, one can see many battered women - their bodies marked with bruises - who are living in fear of their husbands (pers. obs.). Importantly, domestic violence is a new social phenomenon among the Waodani, who, contrary to other indigenous groups, refrained, in the past, from physical abuse during domestic disputes (Flacso researcher, pers. comm.).

Violence and alcoholism might, however, be symptoms of the underlying problem of limited economic opportunities in the region. The Waodani do not have technical skills and education that are

increasingly needed to manage their territories for resilience and sustainability (pers. obs.). Although there is lack of a comprehensive research on the levels of education within the Waodani nationality, a report by Mora et al. (2011) presents a discouraging picture. The overall level of education in the Waodani communities is low, school infrastructure is poor, and didactic materials are insufficient and out-of-date. Furthermore, teachers have only high school diplomas and many of them are Kichwa who do not speak *Wao tededo*. Holt et al.'s (2004) research conducted in Kewediono demonstrated that 22% of males and 18% of females did not have any formal education.

Looking at educational attainment across the nationality also reveals a disturbing picture. According to the data collected by Lara et al. (2002) for the Waodani territorial management plan, the level of education among the Waodani is much lower than in the rest of the country. The proportion of the Waodani without any education is three times higher (17.6%) than the national level (6.2%). The differences are quite noticeable at the secondary and post-secondary level of education. The percentage of the Waodani that achieve secondary or higher level of education (23.3%) is half of that for the rest of Ecuador (40.9%). These differences are even more pronounced when we take into account the age group between 34 and 64. Within this age group, the Waodani have five times more people without any education than the rest of the country (54% vs. 10.2%). In addition, among the Waodani, women have much lower levels of education than men (Lara et al., 2002).

The level of education also varies across the Waodani territory. Data collected within the block 16 demonstrate that only 10.5% of the Waodani in this area have primary education and only 2.6% finished their secondary education. Only two men from the region obtained a higher level of education (Entrix-Cardno, 2012). Higher levels of education can be found in the communities located in the old Protectorate zone (Section 3.3.2) and communities located along the Auca road (Section 1.2). The lowest levels of education are, on the other hand, found along the Maxus road, within the block 16 (Lara et al., 2002).

Such overall deficiencies in education as well as the disparities between the genders and different communities in educational attainment prevent the Waodani from improving their livelihoods across the nationality. This, in turn, makes them even more dependent on ecologically destructive and unsustainable oil exploration jobs (Holt et al., 2004). Again, thus, the SES's low potential and low connectedness, which determines the system's level of control over its destiny (Holling, 2001), become evident, suggesting the possibility of a poverty trap.

Finally, oil exploration and the market economy have also brought about significant spatial re-organization of the Waodani communities. Some of the family clans decided to move into territories surrounding the oil exploration sites (e.g. along the Maxus road) in hopes of benefiting from activities

in those areas (Entrix-Cardno, 2012). This trend is detrimental to the Waodani SES because it is not sustainable. Oil is a non-renewable resource and when it becomes exhausted, the oil companies will depart, leaving the Waodani helplessly lost on the dilapidated sites. As Bunker (1988: 25) writes, “in many cases the economic activities and the settlement patterns which developed around the extractive economy either shrink or become useless”. This process of decline is often irrevocable. Writing about the Waodani, Ziegler-Otero (2004: 6) cautions that “once a culture has been destroyed there is no way to bring it back to life, and the shocked and devastated descendants of a society thus destroyed will not recover, physically or materially, for many generations if ever”.

4.3 BARRIERS CONTRIBUTING TO LOW RESILIENCE AND THE LACK OF ADAPTIVE CAPACITY IN THE WAODANI SES

Overall, it appears that the social-ecological challenges of the Waodani SES are serious and highly detrimental to its sustainability. Importantly, however, as it was argued in Section 2.3.2.1, the presence of such challenges can create a sense of urgency on the part of resource users to move forward with changes that are needed save the SES from a poverty trap into which it might have fallen.

Still, however, what is important to analyze is the extent and pervasiveness of barriers that underpin the social-ecological problems and imprison the Waodani SES in a degraded state. In other words, the ecological and socio-economic problems and challenges might be symptoms or consequences of barriers that need to be addressed first in order to ameliorate the overall situation. These barriers could be related to cultural factors, institutional structures, and governance processes (Jones and Boyd, 2011; Section 2.3.2) which are set in a wider historical or political context (Shackleton et al., 2013) and which prevent the SES from enhancing its resilience to face future uncertainties (Folke et al., 2005; Olsson et al., 2006).

In this chapter, the barriers present in the Waodani SES are analyzed through the prism of the poverty trap to which they potentially contribute as well as the window of opportunity which might help in overcoming these barriers and transforming the system towards adaptive governance. The interdependent nature of these processes is illustrated in Figure 4.2 and will be analyzed in-depth in the following sections.

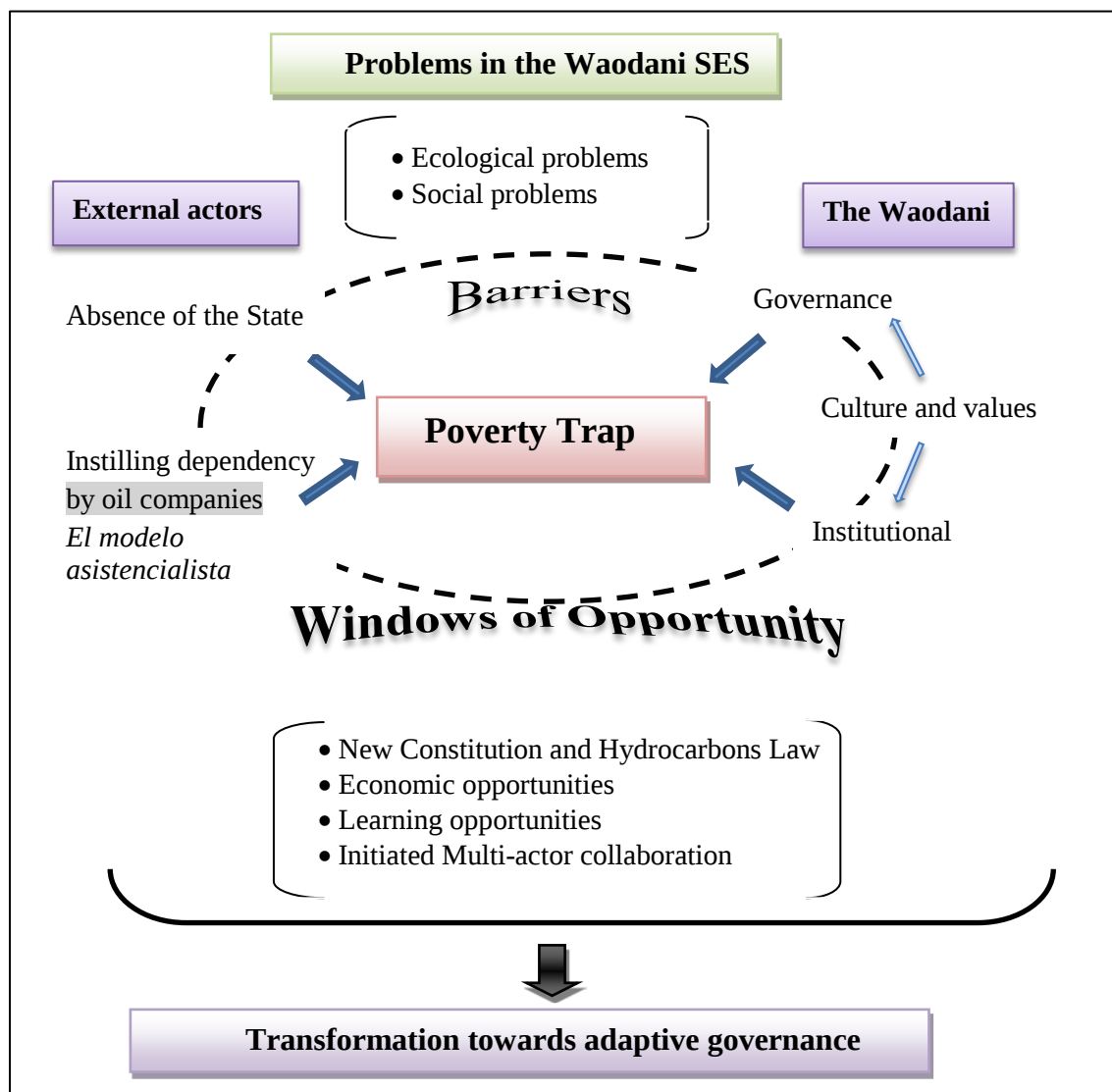


Figure 4.2 Interactive processes among the barriers, the poverty trap, and the window of opportunity within the Waodani SES. The barriers contribute to the creation of the poverty trap, but seizing the window of opportunity might help the SES to undergo transformation towards adaptive governance.

Furthermore, the following analysis provides an opportunity to evaluate the degree to which the Waodani SES - on the basis of the existing data and prior to the current study's data collection and analysis - meets the four conditions of adaptive capacity (Folke et al., 2003).

4.3.1 Barriers related to external actors

Some of the social and ecological challenges facing the Waodani SES could be, partially, attributable to external actors influencing the economic and political reality in the region. In the present case, there are two major external actors - the Ecuadorian State and oil companies - whose impact on the Waodani's SES have been profound and, historically, largely detrimental (Section 3.2.1.3, Figure 4.2). Following Shackleton et al. (2013), the barriers associated with these two actors and their impact on the Waodani SES (Section 4.3.1) could be classified as contextual barriers that are related to

“historical processes that have created path dependencies that can trap people in circumstances that are difficult to escape” (2013: 6).

4.3.1.1 The absent State: the lack of legal and socio-economic support

As Rivas Toledo and Lara Ponce (2001) indicate, for the past 30 years, the oil companies were the only entity that represented the interest of people living in the Ecuadorian Amazon (Figure 4.2). Certainly, there are economic interests on the part of the State in the wealth situated under the land of the Waodani, but dealing with matters related to the people who live on this land has been entirely relegated to oil companies (Lara, 2007; López, 2011). Since the 20-year agreement called the “Agreement of Friendship, Respect and Mutual Support” has made the oil company Maxus - not the Ecuadorian State - responsible for assisting the Waodani in such areas as health, education, and community development (Ziegler-Otero, 2004; Section 3.3.2.2) the Waodani were handed over from the missionaries to oil developers who now assume the role of benefactors (Lara, 2007). Too removed both culturally and geographically from the mainstream of the country, the Waodani were thus left by the State with no power and no leverage in the political discourse. In this context, the notions of combining different types of knowledge and of collaborative learning (Folke et al., 2003) have been undermined, eradicating the system’s adaptive capacity.

Furthermore, by abandoning the Waodani, the Ecuadorian State not only neglected its duties to people residing in the country but also left these people at the mercy of private businesses that are profit-driven and thus ill-equipped to deal with societal issues. Importantly, in light of the conditions for adaptive capacity, such economic relationship hinders learning to live with change and uncertainty (Folke et al., 2003). By its very nature, it focuses on achieving measurable and predetermined quotas, such as oil revenues, instead of promoting flexibility and preparedness for unexpected.

Paradoxically, since the discovery of oil, the Waodani could depend only on those with whom they fought, namely oil companies (Narváez, 1996), and so, paradoxically, ‘contenders’ and ‘destroyers’ have become ‘beneficiaries’ (Aviles, 2008: 94). As a result of the State’s failure to oversee health, educational services, ecological standards, and others aspects that are usually the domain of the central government (Narváez Quiñónez, 1996), the social-ecological well-being of the Waodani SES has deteriorated. Furthermore, indirectly, the State’s absence from the Waodani SES and its lack of collaboration with the indigenous people have contributed to the intensification of *el modelo asistencialista* already initiated by the missionaries (Rivas Toledo and Lara Ponce, 2001; Sections 3.3.2.2 and 4.3.1.2). Unable to depend on the State and deprived of any other options, the Waodani have turned into passive recipients of goods and services provided by the oil companies (Rivas Toledo and Lara Ponce, 2001; Lara, 2007). This sense of abandonment and the lack of legal recourses on the part of the Waodani have made it easier for the oil companies to control the Waodani as well as to

provide subservient services and contribute to social-ecological degradation without any fear of repercussions (Aviles, 2008).

4.3.1.2 *The oil companies: an entrenchment of el modelo asistencialista*

El modelo asistencialista, which was introduced by missionaries, has been perfected by the oil companies for their own benefit (Section 3.3.2.1; Figure 4.2). Indeed, the oil companies have used *el modelo asistencialista* as a framework that would shape their relationship and collaboration with the Waodani (López, 2011). In essence, the Waodani have become ‘managed’ by the oil companies and turned into a dependent partner whose short-term needs would be quickly satisfied in exchange for the unfettered access to natural resources (Rivas Toledo and Lara Ponce, 2001). Instead of incorporating the Waodani into resource management decisions taking place in their own territories, the oil companies have relegated them into a passive recipient of basic goods and services (Rivas Toledo and Lara Ponce, 2001; Narváez Quiñónez, 1996). Furthermore, this relationship has always been compromised because of the Waodani’s inferior negotiating position. For example, ONHAE leaders and, then, NAWÉ leaders have been paid their salaries by Maxus and, later Repsol-YPF; the very oil companies with which the Waodani national leaders were supposed to negotiate contracts for the benefit of the whole Waodani nationality (Rival, 2002; Pearson, 2010; Kimerling, 2012).

As Aviles (2008: 94) states, “there is an implied dependency and a complex relation with the oil companies that provide goods and services but simultaneously threaten the integrity of [the Waodani]”. In terms of a larger picture, *el modelo asistencialista* has robbed the ordinary Waodani from a desire to actively tackle socio-economic and ecological challenges in a systematic way. Problems related to oil spills, forest destruction, and river contamination are not addressed at the core, but are, instead, dealt with by having the Waodani passively accept gifts and other short-term benefits from the oil companies that are also their primary source of employment (Pearson, 2010). Unsurprisingly, therefore, the Waodani leaders’ dependence on oil companies has made it difficult for them to challenge these oil companies and hold them accountable for socio-ecological devastation (Aviles, 2008). Seen through the prism of Folke et al.’s (2003) conditions for adaptive capacity, the emergence of such a relationship is antithetical to the notion of nurturing diversity in management. With Waodani leaders being passively dependent on oil companies, bringing new thinking and collaborative learning or combining different types of knowledge becomes difficult to achieve.

Finally, the oil companies’ managerial decisions have conditioned the Waodani to act in ways that are antithetical to ensuring the sustainability of their SES. For instance, by providing annual payments of \$800,000 to \$1 million to NAWÉ without any specifications, the Maxus Ecuador and later Repsol-YPF contributed to growing corruption and divisions in the nationality (Pearson, 2010; pers.obs.). Moreover, the oil companies’ tendency to quickly give in to the Waodani’s demands by providing

them with some short-term benefits has exacerbated the already unhealthy relationship between the parties. As Pearson (2010: 102-103) states “Waadani often create roadblocks across the company road to make demands; [...] and they have threatened and attempted murder of company workers”. Usually, the oil companies put aside some amount of their economic resources to solve almost every problem in local communities just to ‘buy’ their support (Brahic, 2009). Consequently, any threats and demands by the Waodani are downplayed by giving them gifts or any other requested items (Pearson, 2010). In the end, therefore, “the cycle of demanding and gifting continues, distracting people from possibilities for real change” (Pearson, 2010: 107).

To reiterate, in the context of managing the Waodani SES for adaptive capacity and resilience, the role of the oil companies needs to be deemed as highly detrimental. Again, going back to Section 2.2.4 of the study substantiates this argument. Neither the factors identified by Folke et al. (2003) as necessary to enhance adaptive capacity nor those proposed by Armitage et al. (2007) were recognized in the oil-based development in the Waodani SES. Firstly, instead of nurturing diversity in management, oil exploration in the SES has been based on a top-down relationship, with the Waodani being a subservient and dependent partner. Indeed, looking at the state of the SES through the prism of “existing and evolving power relationships among different groups” (Armitage, 2007) presents a picture that could be hardly more antithetical to the notion of co-management. Furthermore, preparing for uncertainty and unpredictable challenges has been neglected. In fact, “abandoning the notion of stability, expecting the unexpected, and increasing the ability to learn from crisis” (Berkes, 2007: 288) cannot be achieved in the context of rigid and pre-determined oil exploration quotas to which the social and ecological well-being of the system is subordinated.

4.3.2 Barriers related to the Waodani

Although, to a large degree, the barriers underlying the social-ecological challenges facing the Waodani’s SES can be attributed to the Ecuadorian State and the oil companies, the Waodani people are also partly responsible for the poverty trap into which their SES seems to have fallen. Overall, the negative impacts of the Waodani on their SES relate to governance and institutional barriers that have impeded the sustainable management of the SES (Figure 4.2). These barriers are, in turn, the result of anthropological characteristics and cultural values that still resonate in the Waodani nationality. As it will be pointed out in Section 4.3.2, a cultural script plays a key role in determining adaptive capacity of the Waodani SES (Jones and Boyd, 2011; Adger et al., 2012). Therefore, it needs to be seen to what degree “evolving cultural norms and values remain consistent with collective action and collaborative learning” (Armitage, 2007: 69).

4.3.2.1 Governance barriers: ineffective and corrupt leadership

Although ONHAE (now NAWÉ) was formed to defend the Waodani communities' interests in negotiations with external actors (Ziegler-Otero, 2004), their leadership activities over the years have been marked by rampant corruption and incompetence. For instance, in 2005, the ONHAE leader Juan Enomenga, without a prior consultation with the Waodani communities, signed a deal with Eco-Genesis company that gave this company exclusive rights to 700 hectares of the Waodani's ancestral land (Aviles, 2008; Finer et al. 2009). This was a clear case of bypassing the interests of the communities by the corrupt leadership tempted by the promise of individual gains (Aviles, 2008). Similarly, an illegal selling of a plane by NAWÉ president, Enhuenguime Enqueri, demonstrates the level of corruption among the Waodani national leaders (Gálvez, 2009; pers.obs.).

Furthermore, NAWÉ electoral processes have been characterized by instability and the disregard of NAWÉ's own statutes and procedures (NAWÉ coordinator, pers. comm.). Since the creation of ONHAE in 1990, there have been thirteen Waodani presidents (Table 4.1). What is worse, with almost each leadership change, a completely new governing council or board of directors (*dirigentes*) comes into power, which causes an abrupt discontinuation of any previous agreements and initiatives. Moreover, once dismissed, members of the board leave their offices taking with them all the equipment and supplies (pers. obs.). This lack of consistency in collaborative efforts and a blatant disregard for public property discouraged some external actors from working with the Waodani. For instance, IBIS¹⁵, one of the organizations that worked closely with ONHAE/NAWÉ, decided to withdraw any further support to the communities until the organization strengthens itself internally and becomes more concerned about rampant corruption (NAWÉ coordinator, pers. comm.).

Table 4.1 The list of presidents of ONHAE and NAWÉ (Source: NAWÉ, pers.comm.).

President	The Presidency Period (approximated)
Nanto Huamoni	1990-1993
Enhuenguime Enqueri	1993-1995 and 2008-2009
Armando Boya	1995-1997 and 2001-2003
Juan Huamoni	1997-1998
Luis Awá	1998-1999
Ricardo Nenquihui	1999-2001
Juan Enomenga	2003-2004
Vicente Enomenga	2004-2006
David Awá	2007-2008
Orengo Tocari	2008 - one month
Pedro Enqueri	2009-2012
Cawetipe Yeti	2012- 2013
Moi Enomenga ¹⁶	2013-present

¹⁵ IBIS is the Danish NGO who worked with Waodani nationality between 1999 - 2007 to strengthen their institutional capacity and promote the tourism development within their territory.

¹⁶ Moi Enomenga was officially recognized as the new NAWÉ president in July 2013 after my field research has been finished and when I left Ecuador and this is why I refer to Caw etipe Yeti as the current president of NAWÉ.

The Waodani's governance and management barriers are also related to the Waodani's passivity in relations with external actors that have made them susceptible to the already discussed *el modelo asistencialista*. The Waodani and, especially, their leadership need to be partially blamed for assuming a passive role in shaping the economic reality of their SES. Instead of actively seeking out alternative project opportunities and ensuring the sustainability of the SES, they passively accepted a governance model in which resource management is relegated to outsiders in exchange for access to unsustainable goods and benefits (Rival, 2002; Ziegler-Otero, 2004; Aviles, 2008; Pearson, 2010). On the other hand, however, it needs to be recognized that the Waodani have had, historically, relatively little capacity to influence decision-making processes in their SES. Economic dependence on the powerful oil industry that has been sanctioned by the State has severely limited Waodani's self-management and livelihood opportunities. As a result, the Waodani leaders' inconsistency and even their corruptness or unethical behavior might be the reflection of their impotence and desperation when facing the powerful actors.

Overall, therefore, the reality of ineffective, corrupt, and passive Waodani's leadership might have additionally contributed to undermining the Waodani's negotiating position with external actors. It has thus undermined even more the possibility for combining different types of knowledge, nurturing diversity, and promoting dynamic management arrangements that are conducive to adaptive capacity (Folke et al., 2003).

Cultural barriers to effective governance

Importantly, however, the identified governance barriers to adaptive governance are partly attributed to the indigenous people's adherence to cultural values of individualism, self-reliance, autonomy, egalitarianism, and the notion of *abundancia* or forever-giving forest (Kane, 1995; Rival, 1996, 2002; Robarchek and Robarchek, 1992, 1998) (Figure 4.2). For instance, although the Waodani constitute a distinctive nationality, every Waodani has a total freedom in terms of decisions, pursuits, and way of living. No one can force anybody, even children, to do anything (Robarchek and Robarchek, 1998; Rival, 2002). As a consequence of this cultural script, a sense of social cohesion did not extend beyond an immediate family circle, and even within this context, elderly or sick Waodani who could not take care of themselves were left behind when a group decided to change settlements (Yost, 1981).

Furthermore, historically, there was no permanency in local leadership (Robarchek and Robarchek, 1992, 1998; Lu, 2001; Holt et al., 2004; Stocks et al., 2012). Although within the clan structure, elders enjoyed relatively more power than young Waodani, this power was not founded on any unshakeable cultural prerogatives. If anything, it was based on some people's ability to persuade

others, who would then follow them because they genuinely agreed to do so and not because they felt compelled to do it (Robarchek and Robarchek, 1998). Therefore, analyzing the Waodani's individualism through the prism of adaptive capacity and managing for resilience demonstrates challenges that the Waodani SES faces. Extreme individualism explicitly clashes with the fourth factor underlying adaptive capacity. Achieving "self-organization toward social-ecological sustainability" is difficult in the cultural context where individual goals and interests determine social behavior. From this perspective Armitage's (2007: 69) question whether "evolving cultural norms and values remain consistent with collective action" has to be answered in a negative.

To a degree, espousing the values of individualism and egalitarianism has remained a social and political factor until the present times; "Waodani culture can be characterized as extremely individualistic and independent" and their "social organization is leaderless and decentralized with few limits on individual autonomy and few social obligations" (Lu and Wirth, 2011: 235). The Waodani themselves are clearly aware of this. Even the very creation of the first central leadership body, ONHAE, "reflects a conscious and deliberate attempt to create a single 'nation' from the dispersed kindreds and regional bands" (Robarchek and Robarchek, 1998: 169). From the outset, the Waodani were, thus, pushed into a new and unknown management domain that went against their traditional egalitarian principles (Ziegler-Otero, 2004; Lara, 2007). Often, agreements reached by the organization with external actors were rejected by community members (Rival, 2002; Kimerling, 2012) and each family continued to make its own independent decisions (Lara, 2007).

The Waodani's lingering adherence to extreme individualism might therefore partly explain the pervasive corruption and misappropriations of funds and resources that, as explained earlier, dogged both ONHAE and then NAWÉ since their inception. This cultural barrier might motivate national leaders to concern themselves only with personal gains, while benefits for the nationally as a whole are being neglected (Ziegler-Otero, 2004; Aviles, 2008).

Moreover, the Waodani's passivity in their relations with external actors, which was earlier identified as a governance barrier partly responsible for *el modelo asistencialista*, can also be traced to the indigenous people's cultural features. A question needs to be asked why, in the first place, the Waodani are susceptible to passivity and opportunism in relations with outsiders. It is a valid question since, the Waodani realize that the oil companies are threatening their long-term survival, despite providing some financial and infrastructure assistance in the short-term (Ziegler-Otero, 2004).

The answer to this question could lie in the Waodani's legacy as hunters and gatherers. One of the central features of many hunter and gather societies is "trust in abundance of nature's resources" (Sahlins, 1998: 26) and living in "a kind of material plenty" (1998: 11). Similarly, the Waodani's

view of the world encompasses the concept of abundance (*abundancia*) or ‘forever-giving forest’ (Kane, 1995; Rival, 2002). The Waodani believe that their forefathers left the surrounding natural richness through the very fact of having lived there, and the living Waodani will do the same for future generations (Rival, 2002). According to the Waodani, this world is, thus, a reservoir of “natural plenty” (Lu, 2001: 441) and “the forest has always provided, and will always provide” (Holt et al., 2004: 71).

Consequently, this traditional belief of natural abundance might have predisposed the Waodani to see the external actors as the extension of ‘forever-giving forest’ that one needs to exploit for his own benefit (Yost, 1981; Kane, 1995; Rival, 2002). This notion that “the world exists for humans to exploit” (Robarchek and Robarchek, 1998: 115) originally manifested itself in hunting wildlife and gathering fruits from the forest, but, then, gradually, metamorphosed into hunting for opportunities that the external world could offer. In essence, the Waodani have gradually incorporated the external reality with which they now interact into their definition of expanding and forever-giving environment (Kane, 1995; Fuentes, 1997; Rival, 2002; Ziegler-Otero, 2004). As a result, with the entrance of the oil companies into the Waodani SES, ‘cruising’ the forest was transformed into ‘cruising’ the oil camps to collect the goods left behind by the workers (Rival, 2002). Re-enforcing this point, Kane (1995: 137) refers to what was happening in one of the Waodani communities of Quehueire Ono¹⁷ as the representation of “a Huaorani synthesis: a traditional way of living enhanced by certain modern tools that offered access to an *abundancia* not found in the forest and on which, they had come to depend. That is cowode abundance”.

Furthermore, the Waodani’s traditional reliance on the forest - which bears fruit of the work of ancestors and not the living (Rival, 2002) – could create in turn, the society that values consumption over production (Rival, 2002). In regard to this, Rival (1992, as cited in Lu, 2001: 442) writes:

“The Huaorani refuse to produce more: they believe in natural abundance, [...] Their ideal social order is to consume without producing . . . As gatherers, they prefer to rely on any kind of food they may obtain without having to produce it, i.e., through work”.

This is also why the Waodani, as hunters and gathers, preferred ‘extraction’ of their food by simply ‘cruising’ the forest (Rival, 2002). Even though, as argued in Section 3.3.1, the Waodani are also considered horticulturists (Yost, 1981), they “consciously choose not to grow plants in gardens, but rather to exploit plants where they find them in the forest” (Rival, 2002: 83). As a result, switching from an exclusive dependence on resources provided by the forest to an increasing dependence on

¹⁷ Current spelling is Kewediono

goods handed out by the oil companies fits the society that values consumption over production (Rival, 2002). However, it needs to be noted in this context that relying solely on this and other cultural characteristics of the Waodani in explaining their preference for quick gains might oversimplify the dynamic in the SES. As it is argued throughout this thesis, the Waodani have been forced to exist in the externally imposed economic context that offers neither permanency nor predictability. Therefore, taking advantage from whatever opportunities come their way – however short-lived – might be a necessary survival strategy.

The Waodani's cultural susceptibility to *el modelo asistencialista* can be also traced back to the notion of 'demand-sharing' that has largely defined their interpersonal relations (Section 3.3.1). Traditionally, the Waodani subsistence economy was based on consuming together wild game or other food that was acquired by individual efforts (Rival, 2002). As Rival (2002: 102) writes, the Waodani "social life could be summarized in one short phrase: procure alone and consume together". However, when, in the process of consuming together, "someone feels entitled to a share but feels ignored, that individual may assert a claim by openly asking for some gathered fruit or hunted game" (Rival, 2002:103). As conceived of in the culture, such action signifies an ability to get whatever one wants to get and in whatever way (Kane, 1995). Contrary to other hunter and gather groups which engage in reciprocal exchange (Applebaum, 1985; Gowdy, 1998; Aviles, 2008), in the Waodani culture, receiving food portion does not place the recipient in any sort of obligatory position, (Rival, 2002; Aviles, 2008). It is because, Rival (2002) argues, food demand-sharing that takes place in Waodani traditional household is an activity which "is not based on reciprocity, for the act of giving and receiving are totally dissociated" (2002: 104). In other words, sharing occurs 'on demand' and is generalized to the extent that "givers never become creditors, nor receivers debtors" (Rival 2002:104). As a consequence, on the most basic level, the Waodani - given their legacy as hunters and gatherers - could be prone to taking advantage of the forest and people residing there through self-reliant means without any obligation to pay back in whatever form (Kane, 1995).

Therefore, in a very broad generalization, the Waodani construe their whole external world in terms of "natural patches of wealth" (Rival, 2002: 169) to be exploited when an opportunity arises (Bird-David, 1992). In this context, constant short-term assistance provided by the oil companies to the Waodani communities in the form of food, equipment, medicine, and other gifts relates to the notion of 'patches of wealth' to be acquired by demand (Rival, 2002). The legacy of demand-sharing solidifies the skewed relationship between the Waodani and oil companies; a relationship that is opportunistic for both parties. In the end, *el modelo asistencialista* grows ever more pervasive and intractable without producing any meaningful or qualitative change to the Waodani SES.

Importantly, however, as already noted, the Waodani's ineffective governance approaches should be only partially attributed to their cultural features. External actors, such as the oil industry and the Ecuadorian government, entered their world and imposed an economic, legal, and political context over which the Waodani had little say. In essence, therefore, their actions and behavior could also be a reflection of an attempt to desperately navigate a system which is still foreign to them and in which they are relatively powerless. In this light, blaming the Waodani for their mismanagement of funds and inefficient governance needs to be tempered by understanding and appreciating the challenging context they find themselves in.

4.3.2.2 Institutional barriers: lack of resource management rules and conflict resolution mechanisms

An institutional framework that is lacking in rule compliance and sanctioning mechanisms is antithetical to the premises of both adaptive capacity and ACM (Dietz et al., 2003; Ostrom, 2005). Such a framework endangers natural resources and instills a sense of lawlessness and impotence in the society (Dietz et al., 2003). By preventing or undermining change in the face of uncertainty, it keeps the SES in a poverty trap. Indeed, as argued by Folke et al. (2003), flexible and dynamic institutional arrangements are the key factors underpinning the fourth condition of adaptive capacity. In light of these facts, it becomes essential to provide an overview of the Waodani's institutional arrangements for the resource management (Figure 4.2).

Historically, the Waodani lacked any formal institutions that would govern their resource use (Lu, 2001). Even to this day, they consider their territory an 'open' in a sense that land, animals, plants and other resources belong to all of them and to those who are married to them (Holt et al., 2004). As Rival (1996) and Holt et al. (2004) explain, when resources are 'captured' or 'worked on' (e.g. a garden is planted or an animal is caught) by any individual Waodani, they become his or her 'private property' from which others are excluded, and those who want to use these resources have to ask for a permission. Still, despite having some ownership rules, the Waodani were reluctant to impose any sanctions on community members who exhibited fragrant disregard of the communal rights and restrictions (Yost, 1981; Robarchek and Robarchek, 1998).

Despite its shortcomings in terms of enforceability, this informal institution framework might have served the Waodani well enough in the earlier times when they were few in numbers; their land was vast; their hunting methods were traditional; and their settlement pattern was dispersed (Yost, 1981; Mena et al., 2000; Lu, 2001). However, the notion of 'the open territory' seems to be still prevalent among the Waodani, although the pressure that they and others exert on the natural environment is incomparably greater. In their recent study, Lu and Wirth (2010: 11) write that "there was no

consensus as to appropriate responses to improper resource use and no widespread agreed upon rules for how to deal with resource conflict”. Indeed, the involvement of Waodani communities in commercial hunting (Section 4.2.1) can be partly attributed to the lack of rules and sanctioning measures (Section 4.3.2.2). Furthermore, the Waodani’s continuous inability to come forward with enforceable rules extends into their dealings with the pervasive corruption taking place on their leadership level. For instance, the former ONHAE leader Juan Enomenga, who was responsible for signing the illegal contract with Eco-Genesis (Section 4.3.2.1), has never been banished from the organization. Far from it, he has been nominated as the tourism director in the election in March 2012 (pers. obs.).

With respect to conflict resolution mechanisms, Robarchek and Robarchek (1992, 1998) argue that the Waodani lacked any mechanisms for dealing with conflicts. The only responses to any threat were “spearing raids” or “fleeing [and] hiding” (Rival, 2002: 49). Neither of the two is possible today. Still, the Waodani, in the moments of pressure and conflict, struggle with their inability to deal with Kichwa or colonists that are encroaching on their territories to access their resources. On many occasions, they say that the only way to resolve conflicts with people that enter their territory is to apply the ‘warrior code’ (*código guerrero*) (pers. obs.). The same idea of resolving problems was promoted in their letter to the president of Ecuador:

“Si su gobierno no cumple sus leyes nosotros utilizaremos las lanzas y aplicaremos el código guerrero Waodani/ If your government does not comply by its laws, we will use the spears and apply the Waodani warrior code” (translated by M.B., NAWÉ, 2007)

Overall, therefore, the Waodani’s institutional framework that is characterized by the lack of formal rules, sanctions, and conflict resolution mechanisms is ill-fitted to the present context of dealing with problems with external actors, increasing ecological pressures, and territorial disputes. Altogether, the lack of rules and enforceable sanctioning feeds corruption and might have created a sense of lawlessness and impudence that has kept the Waodani in an impoverished state and discouraged external actors from collaborating with them. In this context, again, promoting institutional and management arrangements that foster ‘learning by doing’ (Folke et al., 2003) becomes challenging.

Cultural barriers to effective institutional arrangements

Overall, the Waodani’s very basic institutional system mirrors other hunter-gather societies, whose territorial boundaries were either vague or overlapped with other groups, and where individuals moved freely from one region to another (Zerzan, 1998). Furthermore, as in the case of the weak governing structures discussed in Section 4.3.2.1, the values of individualism, autonomy and egalitarianism could constitute cultural barriers underpinning the lack of explicit rules, sanctions, and conflict resolution mechanisms in the Waodani SES (see Figure 4.2). Since every individual has the

right to tap into resources using his or her preferred methods of hunting (Rival, 2002), introducing and enforcing rules and sanctions can become a challenge.

Furthermore, apart from individualism and egalitarianism, the already discussed concept of abundance or ‘forever-giving forest’ (Kane, 1995; Section 4.3.2.1) also has relevance in the context of rules and sanctioning mechanisms in the Waodani SES. In essence, in the generous and forever-giving forest, imposing limits on one another’s access to natural resources is not necessary, since acquiring more than one’s share or even destroying and wasting resources will not endanger the forest’s ability to sustain all of its inhabitants (Kane, 1995). Therefore, the Waodani could give support to Stevenson’s view (Section 2.6.5.2) that for some indigenous people the very the concept of using rules and sanctioning mechanisms in “‘managing plants’ or animals is unfathomable” (Stevenson, 2006: 169). Furthermore, in the case of the Waodani, the notion of active management of natural resources through rules and intentional planning might be especially incongruent with the culture because, as argued above, the ‘abundant’ forest carries the legacy of the past, not the present. This is why ‘cruising’ through the forest to gather plants, fruits or seeds left by past human activities blurs the distinction between the ‘extraction’ and deliberate ‘management’ (Rival, 2002: 81). Therefore, it becomes crucial to analyze the very possibility of active management - in the present case, ACM - in such as society as the one represented by the Waodani whose governance systems openly clash with those of mainstream society.

The governance and institutional barriers, as well as the cultural barriers underlying them, discussed above are presented in Table 4.2.

Table 4.2 The overview of the main governance and institutional barriers as well as the cultural barriers underlying them.

Governance barriers ←	Underlying cultural barriers
Corruption and incompetence Political Instability Passivity and dependency in relations with the oil industry	Individualism Autonomy Egalitarianism Belief in abundance Valuing consumption over production ‘the world is to exploit’ (hunters and gatherers) Demand-sharing
Institutional barriers ←	Underlying cultural barriers
Concept of ‘open territory’ Lack of rule compliance Lack of sanctioning mechanism Lack of conflict resolution mechanisms	Individualism Autonomy Egalitarianism Belief in abundance ‘the world is to exploit’ (hunters and gatherers)

4.4 TRANSFORMATION AND AN EMERGENCE OF A WINDOW OF OPPORTUNITY

As the previous sections demonstrate, the social-ecological problems in the Waodani SES are largely the consequence of a number of contextual, institutional and governance barriers that have depleted the system's adaptive capacity. In accordance to the adaptive cycle, the compounded effect of such barriers can deprive the SES of its resilience and contribute to its slide into a poverty trap (see Section 2.3.2).

On the other hand, however, an emergence from a poverty trap is still possible, if a temporary window of opportunity presents itself in a given SES (Holling, 1986, 2001; Gunderson et al., 1995; Olsson et al., 2006; Chapter 4). As argued in Section 2.3.2.1, resource users' growing awareness of social-ecological challenges and barriers underlying them can serve as a motivational drive for the emergence of a window of opportunity that could help in transforming an SES towards adaptive governance (Figure 4.2).

Addressing the possibility of a window of opportunity appears justified in the case of the Waodani SES. As the sections below argue, the Waodani appear to be engaged in institutional reorganization that could, potentially, set the stage for adaptive governance. Furthermore, there is an emerging trend in the SES towards greater collaboration across various levels of management. Finally, on the surface at least, this trend is supported by constitutional and economic developments that could provide a legal as well as a financial foundation to strengthening cross-level alliances.

4.4.1 New Constitution and laws

The first factor contributing to the emergence of a temporary window of opportunity is related to a larger political context in Ecuador. Recently, significant opportunities have become available to the Waodani as the result of the implementation of the new Ecuadorian Constitution in 2008 and the law known as the Organic Code for Territorial Organization, Autonomy, and Decentralization (COOTAD) in 2010 (Acosta, 2008; Asamblea, 2008; Asamblea, 2010; Walsh, 2010; Torres et al., 2011). The constitution provides specific benefits for indigenous peoples in regards to plurinationality, autonomy in governance, and cultural diversity. The official recognition of indigenous rights offers an opportunity for indigenous participation in project planning and development as well as in decision-making processes (Asamblea, 2008: Art. 279). It thus creates a participative space for sharing traditional knowledge and influencing the design of environmental policies and strategies.

In specific terms, the new legislation calls for increased decentralization and for transferring some of the central government's authority, administration responsibilities, and budget procedures to local governments at the level of provinces, municipalities, and parishes (Asamblea, 2010: Arts. 28, 105; Asamblea, 2008: Arts. 238, 240, 258). These new local governmental bodies (*Gobiernos Autónomos Descentralizados* or GADs)¹⁸ will assume, in turn, responsibilities over education, health, and economic well-being of indigenous communities (Asamblea, 2010: Art. 138; Asamblea, 2008: Art. 265). Under the new legal framework, GADs are required to create development and land use plans (*Planes de Desarrollo Ordenamiento Territorial* or PDOTs) that define future territorial management and land use planning within their jurisdictions (Societas Consultora de Análisis Social, 2012). This process is intended to create a participatory space for indigenous people to take charge of social and economic development in their territories. At the same time, the constitutional legislation allows for the creation of local indigenous governmental entities that would represent nationalities whose territorial rights are recognized under the Indigenous Territorial Circumscriptions (*Circumscripciones Territorial Indígenas* or CTIs) (Asamblea 2010: Art. 93; Asamblea, 2008: Art, 257). They will be recognized as GADs and will receive funding to design and implement sustainable projects that benefit indigenous communities (Andolina et al., 2009).

Overall, it could be argued that these recent changes and developments signify an emergence of a potential window of opportunity that creates a favorable context for both enhancing adaptive capacity and considering ACM in the Waodani SES. The new constitution explicitly promotes decentralization processes that are conducive to fostering cross-level participation and thus transitioning towards adaptive governance (Folke et al., 2005; Armitage et al., 2007). It also distances itself from the decades-long neglect of indigenous territories by insisting on direct collaboration between governmental bodies and indigenous people. This trend towards decentralization and greater involvement in indigenous affairs creates a foundation for collaborative processes that align the system with the premises of ACM (Olsson et al., 2006; Brockhaus et al., 2012) by satisfying the first and the third factor underlying adaptive capacity (Section 2.2.4.2).

Furthermore, the introduction of the Hydrocarbons Law (*Ley de Hidrocarburos*) approved in 2010 (Guaranda, 2010) also presents potential opportunities in terms of co-management of the SES. In this case, a window of opportunity is the result of the dramatically redefined relations between the State, private oil companies, and indigenous groups, which can eventually lessen the Waodani's passive dependence on oil companies. Until recently, the Ecuadorian State received royalties from oil companies but did not concern itself with social-ecological problems in the areas designated for oil

¹⁸ Each province has a Decentralized Autonomous Government with prefects and provincial councils (made up of mayors of the province or designated councillors) who carry out executive and legislative functions. At a local level, there are Municipal and Parish Autonomous Governments.

exploration (Guaranda, 2010). As already explained in the Section 4.3.1, oil companies were responsible for healthcare services as well as educational and socio-economic development in the SES (Rivas Toledo and Lara Ponce, 2001; Lara, 2007, Almeida and Proaño, 2008, Coffey, 2009). The Hydrocarbons Law expands, however, the national government's authority over territories where oil exploration is taking place. In accordance with the new reform, private oil companies are precluded from paying money directly to individual communities for education and health expenses (Ministerio de Interior, 2012; Repsol-YPF officer, pers. comm.). Instead, the law designates 12% of private oil companies' profits to be remitted to the State that will then invest this money - through GADs - in projects related to health and education of indigenous communities residing in the areas directly affected by oil exploitation (Guaranda, 2010). The communities residing in oil-concession areas, as well as outside of them, will also be able to obtain funds allocated for other development projects (Guaranda, 2010) by presenting proposals directly to GADs and by being part of the yearly 'participative budget planning' (Ministerio de Interior, 2012; Repsol-YPF officer, pers. comm.).

The Hydrocarbons Law thus provides the Waodani with an incentive to break their dependency on the oil industry. It also fits into ACM's framework because it sets the stage for multi-level collaboration between the State and indigenous people, a reality that has been long lacking in the context of the Ecuadorian Amazon (Rivas Toledo and Lara Ponce, 2001; Izko Gaston, 2012). Such collaboration can create vertical links and foster double loop learning through the exchange of worldviews (Armitage et al., 2007) and can thus lead to instilling greater resilience in the social-ecological system.

4.4.2 More diversified economic opportunities

In addition to changes in the legislative framework, the implementation of the Socio Bosque program (Forest Partners) constitutes another initiative introduced by the Ecuadorian government that both signals a window of opportunity and lends itself to ACM. The Socio Bosque program, which was launched by the Ministry of Environment in December 2008, represents an incentive-based initiative aimed at conserving native forests, reducing deforestation rates, and decreasing poverty levels by offering transparent mechanisms for delivering economic benefits to marginalized communities (de Koning et al., 2011; Seiwald, 2011; PSB, 2012a). It provides financial benefits to communities in exchange for signing voluntary agreements to conserve the forest (de Koning et al., 2011; PSB, 2012a). In a direct way, therefore, the program tackles some of the major social-ecological problems discussed in Section 4.2. A more detailed description of Socio Bosque can be found in Box 2.

Box 2: The Socio Bosque Program

With the implementation of the Constitution of the Republic of Ecuador in 2008, the new Forest Governance Model was established in the country (MAE, 2011a) that seeks to manage forest resources with social, economic and ecological sustainability criteria (MAE, 2012b). Following the framework of the new Forest Governance Model, the Ecuadorian Government created the Socio Bosque (Forest Partner) program.

The program that is implemented by the Ministry of Environment has three main objectives: 1) protect over four million hectares of forest, páramos and other native ecosystems and their ecological, economic and cultural values (assuring the flow of important ecosystem services), 2) reduce the deforestation rate and the carbon emission (include Socio Bosque in the National Strategy for REDD+), and 3) improve local livelihoods of about one million people in the poorest regions of the country (MAE, 2012a). Socio Bosque aims, thus, to reconcile conservation and development, converting participants into active defenders of the natural heritage, biodiversity and ecosystem services (Podvin, 2013). It provides direct monetary incentives per hectare per year to individual landowners and indigenous and local communities who commit themselves to protect the ecosystems within their territories for 20 years (Podvin, 2013, MAE, 2012a). Payments that are calculated per hectare depend on the type of ecosystem and the size of the area placed under conservation agreement. Priority to enter the program is given to areas with high deforestation threat, high ecosystem services value and high poverty levels (MAE, 2012a).

By the end of 2013, Socio Bosque had a total of 2,348 signed conservation agreements with landowners (individuals or communities), including around 159,363 beneficiaries. The annual level of investment in incentives (up to December 2013) was \$8,640,709.95 (PSB, 2013). Currently (2012), Socio Bosque is financed by the Government of Ecuador (to date, it has provided almost US\$18 million to the program). It is also supported through donations from international organizations and other countries. In 2011, the German government through its Cooperation Bank KfW provided Ecuador with non-refundable financial support of 10 million Euros (around 13 million USD) for the strengthening of Socio Bosque (Podvin, 2013; MAE, 2012a). Furthermore, since REDD+ mechanism is the second initiative that is being developed under the new Forest Governance Model, the Ministry of Environment is currently defining how REDD+ can provide the financial sustainability of Socio Bosque (MAE, 2012b).

Furthermore, the central structural concept behind the Socio Bosque program is to provide financial assistance directly to individual communities rather than to central leadership (Socio Bosque officer, pers. comm.) and thus counter the pervasive underlying barriers related to corruption and lack of accountability (Sections 2.6.3 and 4.3.1). Thereby, Socio Bosque constitutes a platform for communication between indigenous communities and the government (Podvin, 2013). The program was already implemented in the Waodani territory in May 2011 with the integration of the Kiwado community (WCS, 2012a). Two years later, until May 2013, three more communities of Damointado, Teweno and Tzapino joined it. As a result, currently¹⁹, the participating communities and the Waodani nationality as a whole receive a total annual economic incentive of \$115, 200 (WCS, 2013).

Importantly in the context of the present study, the processes related to Socio Bosque call for the Ecuadorian government and NGOs, such as Wildlife Conservation Society (WCS), to actively collaborate with the Waodani. The Socio Bosque program thus represents a financial sustainability mechanism that could give rise to more participatory and polycentric governance structures and, as a

¹⁹ The total economic incentive is based on the NAWE - MAE- Socio Bosque agreement from May 2013. Once new community joins the program, the economic incentive will increase based on payments calculated on a per hectare basis (see PSB, 2012a).

result, address the second and the third factor underlying adaptive capacity (Folke et al., 2003, 2005; Section 2.2.4.2) - nurturing diversity for reorganization and combining different types of knowledge for learning. In terms of a future ACM initiative, the program has potential to strengthen cross-scale or vertical links which, as argued in Section 2.5.2, are essential to fostering ACM (Berkes, 2002; Olsson et al. 2004a; Berkes et al., 2005; Folke et al., 2005). This might result from on-going and cross-level collaborative efforts between the Waodani, on one hand, and the State and NGOs, on the other. Mutual learning and the exchange of perspectives inherent in such multi-level collaboration can enhance adaptive capacity of the system (Folke et al., 2003, 2005).

Furthermore, the Socio Bosque program also supports horizontal linkages that are necessary for any successful implementation of ACM (Armitage et al., 2007). Such linkages enhance social capital on the community level and across communities and thus relate to Folke et al.'s (2003) fourth factor underlying adaptive capacity - creating opportunity for self-organization toward social-ecological sustainability. Specifically, the program requires active collaboration among all participating communities because of the binding nature of the Socio Bosque agreement. The agreement was signed between the Ministry of Environment and the Waodani central organization, NAWA, and not between the Ministry and individual communities (pers. obs.) In essence, the failure of one community to meet the requirements of the program endangers the whole program and, in turn, affects all the other communities. There is therefore a strong pragmatic incentive for strengthening collaboration among the Waodani people.

4.4.3 Learning opportunities

Recent educational and capacity-building developments taking place in the SES also point to a window of opportunity and to ACM as a way of take advantage of this opportunity. Indeed, there are some signs that the Waodani might be able to address the educational challenges that have partly contributed to their likely imprisonment in the poverty trap. This might, for instance, relate to the efforts of United States Agency for International Development (USAID) project that was implemented by WCS under 'Integrated Management of Indigenous Lands' (IMIL) initiative. The project aimed to strengthen NAWA's administrative and technical capacities, train community guards (*guardabosques*), and enhance the Waodani's capacities in project design, management, and leadership (WCS, 2012b). The general description of the IMIL project can be found in Box 3. Importantly, such externally-funded capacity building efforts are likely to continue in the future. WCS will be able to provide further training opportunities to the Waodani thanks to financial support the NGO has received from the Gordon and Betty Moore Foundation (pers. obs.).

Overall, therefore, it is reasonable to believe that the educational and social preparation of the Waodani to face new challenges will increase in the future. Such preparation is critical to the

processes of co-management and adaptive learning, and it directly addresses the third factor underlying adaptive capacity (Folke et al., 2003, 2005; Section 2.2.4.2). Better educational preparation also narrows the gap between different epistemologies that can prevent collaboration in indigenous communities (Stevenson, 2006; Section 2.6.2). It also lends itself to adaptive co-management by promoting reflection that is necessary for double loop learning and by encouraging willingness to experiment and learn from this experimentation (Armitage et al., 2007). It is, indeed, a direct benefit of educational preparation that it makes one more able and willing to exchange and share knowledge; in other words, participate in processes that lie at the heart of multi-scale co-management (Plummer and Armitage, 2007a).

Box 3. Integrated Management of Indigenous Lands (IMIL) Project (2007-2011) (WCS, 2012b)

The 'Integrated Management of Indigenous Lands' Project was the four-year project (2007-2011) funded by the USAID and implemented by WCS. Its activities focused mainly on two landscapes: 1) the Waodani-Yasuní Biosphere Reserve landscape (Waodani, Kichwa, peasant organizations and communities) and 2) the Awá landscape (Awá organizations in Colombia and Ecuador; Chachi organization and communities; Pasto, Épera, Afro-Ecuadorian communities). Additional support was also provided to the Cofán people in Ecuador and Colombia, the Secoya people, and the Sápara people.

The main objectives of IMIL project were to (1) support consolidation of indigenous territories, (2) build technical, financial and administrative capacity of indigenous organizations to manage their lands effectively, (3) increase economic benefits from conservation, (4) build greater financial sustainability into conservation and development initiatives within indigenous territories, and (5) assess impacts of infrastructure development and human displacement on indigenous territories. In addition, conflict mitigation and management represent a crosscutting theme that is supported through specific activities and approaches in the areas listed above. With this project, WCS supported the Awá and Waodani indigenous groups to secure their territories, strengthen their institutions, improve their livelihoods, foster peace and stability, and support the long term conservation of their territories and cultures.

The project supported the consolidation of indigenous territories by drawing on the work conducted by the USAID funded and implemented from 2002-2007 Conservation in Areas Managed by Indigenous Groups Project (CAIMAN). By implementing IMIL, WCS built institutional capacity for conservation in indigenous territories. It also promoted the construction of sustainable management and financial systems through land and resource planning and by the implementation of ecologically sustainable and culturally appropriate conservation initiatives. Land and resource plans encompassed indigenous territories as a whole, as well as specific resources through participatory mapping, community zoning, and evaluations of sustainability. Finally, impacts of infrastructure development and human displacement on conservation landscapes, including indigenous territories and protected areas, were assessed and opportunities for intervention identified.

4.4.4 Multi-actor collaboration has already been initiated

Multi-actor collaboration has already been initiated in the Waodani communities. This fact presents, in itself, a rationale for evaluating the possibility of implementing ACM as well as the evidence of an emerging window of opportunity for this indigenous social-ecological system.

Indeed, considerable time, effort, and money have recently been spent on collaboration with and empowerment of these indigenous people. For instance, as already explained, WCS has been

collaborating directly with the Waodani since 2007, and a big portion of the USAID IMIL funded project was designated for working with NAWE and local communities (WCS, 2012b). Furthermore, in 2008, the Program Yasuni²⁰ was initiated that led to collaboration between the Waodani SES and such organizations such as FAO and UNESCO. At same time, Fundacion Natura started to work with the Waodani on developing alternative livelihood options.

It thus becomes necessary to evaluate how these newly forged relationships could be best used for the benefit of the SES. Since ACM offers a framework that explicitly encourages multi-actor collaboration, testing its feasibility in the Waodani is justified (Folke et al., 2005).

Finally, apart from the multi-level collaboration between international NGOs and the Waodani people, features of the polycentric governance have also begun to manifest themselves on the level of the Yasuni Biosphere Reserve and are reflected in the official recognition of the YBRMC by the Ecuadorian State (see Section 3.2.1.2). This governance network, gained legitimacy in 2008, offers an opportunity for cross-level collaboration that is crucial for ACM (Armitage et al., 2007). Importantly, the YBRMC welcomes and incorporates input from all indigenous people residing in the region.

In the context of ACM, all these developments not only provide a collaborative platform conducive to adaptive governance by increasing the diversity of players, but also give an impetus and motivational drive for collective action (Folke et al., 2005). Furthermore, although a greater diversity in management might seem antithetical to the goal of efficiency stressed by top-down approaches, this is exactly what ACM calls for (Folke et al., 2005). As described in Section 2.5.2, it champions redundancy as a way to safeguard the SES against the uniformity in thinking and to better prepare it for future uncertainty (Charles, 2007). Having a complex institutional framework and multiple decision-making structures fosters cross-level collaboration, allows reconsidering management plans from different perspectives, makes it harder to evade rules, and fills gaps and omissions in the system (Dietz et al., 2003; Charles, 2007).

²⁰ The Program Yasuni (*Programa Yasuni*) project (2008-2012) referred to as “the Conservation and Sustainable Management of Natural and Cultural Heritage of the Yasuní Biosphere Reserve” represented a joint efforts of FAO, UNIFEM, UNDP, UNESCO, UN-HABITAT, UNWTO and the Ecuador Ministry of Environment.

4.5 RATIONALE FOR THE STUDY: AN EVALUATION OF THE POTENTIAL FOR ACM IN THE WAODANI SES

As the previous sections demonstrate, there is a complex set of interactions among the problems, barriers, and emerging opportunities that are shaping the Waodani SES (Figure 4.2). The socio-economic and ecological problems discussed in Section 4.2 and the barriers discussed in Section 4.3 indicate that the management approaches and strategies guiding the Waodani's SES are responsible for keeping the system in the poverty trap. Therefore, the extent of challenges and the complexity of the barriers demand a profound change in management approaches. That is why the new developments discussed in Section 4.4 are potentially significant. They occur on different levels of the system and reflect political, institutional, and governance changes that indicate a possible emergence of a window of opportunity that, until now, was not evident in the Waodani SES. Furthermore, these potentially positive developments are related to three main actors: the Waodani residing in different communities of the SES as well as NGOs and the Ecuadorian State; both of which represent external actors involved with the SES. Finally, it could be argued that applying ACM as a practical management approach to take advantage of the window of opportunity associated with the emerging polycentric structure could lead to enhancing the SES's resilience and adaptive capacity and, as a result, its overall sustainability.

Still, however, a lot remains unknown, and this is where the present study can offer its contribution. The tentative emergence of the potentially auspicious socio-political, economic, and institutional context provides hope, but does not definitely answer the question whether a successful implementation of ACM is possible in the Waodani SES. To answer this issue, it is necessary to assess the Waodani's governance and institutional barriers as well as, underlying them, cultural barriers in the context of conditions that are necessary for a successful implementation of ACM.

I will also try to determine whether the recent constitutional, legal, economic, institutional, and multi-scale collaborative developments are, indeed, as beneficial as they appear to be on the surface. In other words, do these recent developments in the Waodani SES really represent a window of opportunity that could help in transforming the system towards adaptive governance? For instance, do the recent political, constitutional, and legal changes signify a genuine shift in relations between the Ecuadorian State and the Waodani that could set the stage for adaptive governance? Furthermore do these changes - even if representing a genuine shift in relations with the SES - have sufficient financial, organization, logistical, and informational support to make a lasting difference and to be accepted by the Waodani?

Furthermore, it needs to be evaluated whether multi-level collaboration between NGOs and the Waodani reflects the needs of the indigenous people or merely the demands and priorities of donor institutions. In addition, even if this multi-level collaboration addresses local needs, does it have sufficient long-term funding to allow for resilience building needed to prepare the SES for future uncertainties? Finally, as argued in Section 2.6, the external actors' knowledge about the SES as well as their views, attitudes, and perceptions in regards to it have to be evaluated. Even if the window of opportunity associated with the recent changes does appear real on a legal, political, and institutional level, the lack of knowledge and the rigidity in attitudes and perceptions among people who are entrusted with implementing this window of opportunity might still impede transitioning the SES towards adaptive governance (Adger et al., 2009; Jones and Boyd, 2011). Would these factors predetermine, however, the fate of ACM altogether?

Clearly, answers to all these questions cannot be pre-determined without conducting a comprehensive study. For instance, some of the attitudes, and beliefs - both on the part of external actors and the Waodani - that were discussed earlier might have been evolving and could eventually overcome their historical short-comings and path dependencies. The past can be persistent but does not have to foreshadow the future. For instance, as discussed in Section 2.6.5, indigenous people, as all other human beings, can change if they want to, and do not have to be forever shackled by cultural traits. Does it apply, however, to the Waodani people who will partly determine the future of their SES? Moreover, does it apply to a new wave of State representatives and NGO employees who are involved with this region? This and other questions are addressed by the present research. Both the Waodani people as well as the external actors working with them participated in the study, since all of them are having an impact on this indigenous social-ecological system.

PART 2: METHODOLOGICAL FRAMEWORK AND METHODS

CHAPTER 5

METHODOLOGICAL FRAMEWORK

5.1 INTRODUCTION

Given the context presented in the earlier parts of the thesis, an evaluation of the possibility for implementing ACM in the Waodani SES needs to be done. Importantly, however, an assessment of any ACM initiative has to follow a methodological framework which is comprehensive enough to incorporate all the actors and contextual factors affecting the SES. Therefore, in this chapter of the thesis, such a methodological framework is outlined and described. This framework guided both the collection and analysis of empirical data from different actors within the Waodani SES.

5.2 DEVELOPING A FRAMEWORK FOR ASSESSING THE POTENTIAL FOR THE IMPLEMENTATION OF ACM IN THE WAODANI SES

5.2.1 The focus of the study: the Waodani, NGOs, and the Ecuadorian State

The framework developed to evaluate the Waodani SES's readiness for ACM distinguishes between the Waodani residing in some selected communities and two major external players impacting on the SES: NGOs and the Ecuadorian State.

In the case of the Waodani, four Waodani communities that represent the core, buffer and transition zones of the Yasuní Biosphere Reserve. Each of these zones plays a different role²¹ in contributing to the Yasuní Reserve's overall goal of reconciling sustainable development with conservation. Therefore, , it is important to see how and to what degree the Waodani living there meet the conditions for implementing adaptive co-management. Obtaining, data from these three different parts of the reserve will provide, in turn, a basis for evaluating the potential for ACM in the YBR as a whole.

²¹ Each of the zones has a specific function to help the biosphere reserve to fulfill its three mutually enforcing and complementary objectives: 1) in-situ conservation of biodiversity, 2) sustainable economic and human development and, 3) provision of logistics for research, monitoring, education and training (UNESCO, 1996).

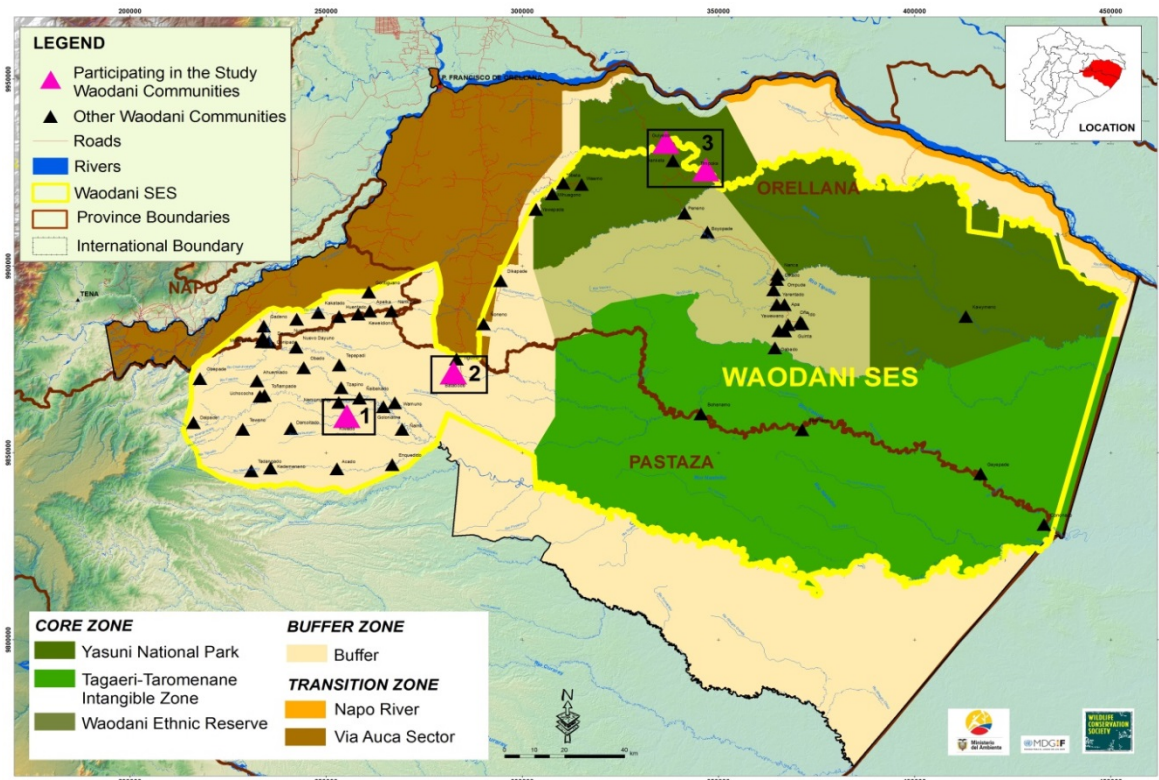


Figure 5.1 Location of the three research areas represented: 1) Kiwado, 2) Batabudo and 3) Guiyedo and Timpoka (Source: WCS-UNESCO, 2011).

Consequently, three research areas were selected. They are represented by four communities: Kiwado, Batabudo as well as Guiyedo and Timpoka (Figure 5.1). Timpoka was selected to make sure that I have a sufficient number of participants in my focus groups. However, due to its proximity to Guiyedo and similar social and economic dynamics²², I group these two communities together and refer to them as one community of Guiyedo. Kiwado located in Pastaza Province, was, on the other hand, selected to represent the buffer zone. Contrary to Guiyedo and Timpoka, Kiwado is located far from the roads and can be reached only by the river or aerial transportation. Finally, Batabudo was selected to represent the transition zone. It is located on the border of Orellana and Pastaza, in proximity to the Auca road. It is important to note that, even though, geographically, Batabudo falls within the reserve's buffer zone, its proximity to the Auca road that represents the main transportation route within the transition zone makes this community socially and economically part of this area. It could thus be considered a valid proxy for the transition zone.

As far as the external actors are concerned, I took a broad and inclusive approach. In the case of NGOs, I intended to evaluate organizations that are currently present in the SES, such as WCS, as

²² Guiyedo and Timpoka have educational links (school in Guiyedo), cultural links (all cultural events take place in Guiyedo), economic links (the Repsol-YPF's influence) as well as social links (daily football games in Guiyedo).

well as those that are no longer associated with the Waodani. The reason for this is that the collaborative context in the Waodani SES is always changing, and some of the organizations previously present in the SES might return there in the future and play, again, an active role. Therefore, evaluating NGOs in a broad and indiscriminate manner can shed light on future potential for ACM. Furthermore, my intention to have a comprehensive assessment of the non-profit sector also resulted in placing universities and other research entities under the umbrella of NGOs.

Finally, in regards to the Ecuadorian State, I also chose a broad and inclusive approach. All factors related to the State - ranging from local governmental bodies to policies originating on the central level of leadership - are potentially important to shaping the future of the Waodani SES. As in the case of NGOs, there are constant changes and lack of stability attached to the State's presence in the SES. However, since a similar trend is likely to persist in years to come, evaluating the State in a comprehensive way can provide a good indication of its impact on any future implementation of ACM.

5.2.2 The development of the methodological framework – the Waodani

In the case of the data and narratives describing the Waodani people's readiness for ACM, I employed a deductive approach to data analysis. In this approach, earlier studies and concepts contribute to the search for themes and categories (Patton, 2002; Zhang and Wildemuth, 2009). In the present case, I collected data related to specific ACM conditions that had been selected prior to the actual data collection. In other words, specific themes or categories determined questions and discussions during the focus groups and individual interviews (Boyatzis, 1998; Braun and Clarke, 2006). In general, on the basis of the literature review and the pilot study (Appendix 3), I chose seven conditions for ACM and incorporated them into the methodological framework (McCracken, 1988; Acharya and Joshi, 2009). These conditions will be analysed in the context of the four characteristics of adaptive governance to assess the Waodani SES's readiness for future implementation of ACM. These characteristics are: polycentric institutions, participation and collaboration, self-organization and networks, and learning and innovation (Djalante et al., 2011, Section 2.5.2). Since adaptive governance has the same features as ACM, transitioning towards it creates a context for successful implementation of ACM (Plummer et al., 2013, Section 2.5.1). A visual representation of the evaluative approach undertaken in the study is presented in Figure 5.2.

Overall, the selection of the seven conditions to evaluate the readiness of the Waodani people for ACM resulted from researching a number of relevant sources. Firstly, as Pomeroy (2007) states, "common property theory [emerged] as the basis of co-management", and thus Ostrom's writings - especially her eight design principles (1990, 2005) - have been critical to formulating the conditions needed for co-management. Ostrom's research provided Pomeroy - in conjunctions with the findings

of Pinkerton (1989) - with a set of conditions that are necessary for implementing successful co-management initiatives. Furthermore, Pomeroy supplemented Ostrom's and Pinkerton's findings with those emerging from studying successful fisheries co-management initiatives in Asia, Africa, and the wider Caribbean (Pomeroy, 2007). These research data coincide, to a large degree, with the work of Ostrom and Pinkerton, but also expand it by specifically addressing such aspects as alliance and networks, knowledge of the resource, leadership, individual incentive structure as well as empowerment, capacity building, and social preparation. Additionally, the insights from Plummer and Armitage's (2007a) Delphi study and Plummer et al.'s (2012) systematic review of adaptive co-management were employed to further support the present research's methodological approach. These two studies were especially important because their findings represent the work of a large number of scientists and are thus the reflection of the growing consensus regarding the factors affecting the implementation of ACM (Plummer et al., 2012).

Apart from this, I also benefited from research work conducted by Dietz et al. (2003), Olsson et al. (2004a), and Fabricius and Cundill (2010), especially in such areas as rule compliance, access to information, and the role of leadership. Furthermore, the previously analyzed findings of O'Flaherty et al. (2008), McGregor (2009), Notzke (1995), Kofinas (2005), Stevenson (2004, 2006), and Nadasdy (2005, 2007) in regards to challenges of implementing co-management in indigenous societies were also considered in developing the framework for the present study. Finally, the selection of the seven conditions for ACM was guided by an intention to address ACM in the context of the barriers contributed to imprisoning the Waodani SES in a poverty trap (Section 4.3.2). These barriers prevent the system from enhancing its resilience and thus directly relate to the concept of adaptive governance (Sections 2.3.2 or 2.5).

5.2.2.1 Conditions for ACM

The seven conditions used to determine the readiness of the Waodani for adaptive co-management in are discussed in below.

Strong Social Capital

Social capital refers to "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995: 67). It is an intangible form of capital because "it exists in the relations among people" (Coleman, 1988:100). Metaphorical glue that binds people together, social capital is an indication of trust, mutual assistance, friendliness, and readiness for collective action in a given social-ecological context (Putnam, 1995; Djalante et al., 2011). It can also manifest itself in through linkages among people directly or indirectly involved in managing the SES. These linkages, as noted in Section 2.5.2, can be both vertical and horizontal in

nature (Harpham et al., 2002; Armitage et al., 2007). Both types of linkages are crucial for ACM, but since, in the present study, only the Waodani's social capital on the community level was examined, the focus was on horizontal connectivity. For instance, 'communication, i.e., sharing of information and establishment of shared understanding' was identified by Plummer and Armitage's (2007a) Delphi study as one of the core components of ACM. Furthermore, in Pomeroy's (2007) summary of Ostrom's (1990, 1992, 1994, 2005) and Pinkerton's (1989) research studies of key conditions for sustainable community-governed commons, social capital is listed under 'group cohesion'. In the present study, the notion of group cohesion or social capital might present a challenge, given the Waodani cultural features related to individualism and self-reliance (Section 4.3.2) and therefore has to be researched in further detail.

Effective leadership at community/organization level

Plummer et al. (2012) list 'lack of legitimate representation of stakeholders' as the fourth most important factor contributing to failures of potential ACM initiatives. As Fabricius and Cundill (2010: 54) state "awareness raising does not automatically lead to action and adaptation. People need to be motivated to transform their social-ecological system". For instance, a good leader can bring individual convictions for the need for change into collective consciousness and thus turn beliefs into action (Olsson et al., 2006; Section 2.5.2).

Indeed, leadership implicitly influences all the other aspects of ACM, such as learning, sharing of information, and shared decision making (Plummer and Armitage, 2007a). Furthermore, leaders "set courses of action, and provide energy and direction" (Pomeroy's (2007: 177). Olsson et al. (2004a) also point to leaders as agents of self-organization and change towards adaptive co-management. Leaders often "initiate key processes that are required in ecosystem management" and they constitute "key players in institution building and organizational change in relation to ecosystem dynamics and facilitate horizontal and vertical linkages in the adaptive co-management process" (Olsson et al., 2004: 83). In this respect, the notion of leadership is closely related to social capital because both are crucial to enhancing collaboration (Djalante et al., 2011). Such interdependence demonstrates, once again, that the selected conditions for ACM are not necessarily discrete or self-contained.

Importantly, in the context of the present research, it is crucial to determine whether Waodani leaders possess the qualities that would make them suitable to participate in ACM. For instance, I planned to analyze how the cultural barriers discussed in Section 4.3.2.1 could impact on fostering adaptive governance.

Awareness of the importance of resources

The issue of the importance of the resource relates to ‘conflict of interests of those involved’; the most detrimental factor to ACM, according to Plummer et al.’s (2012) review of the literature. As in the case of ‘perceptions of the problem’ and ‘the need for change’, which are discussed later, it is the level of shared values that is being evaluated. The importance of the resource predetermines community members’ motivation to engage in collaborative efforts. Indeed, the salience of natural resources is a basic condition for action to manage resources for long-term sustainability and a foundation for other underlying factors that are conducive to collaboration (Gibson et al., 2005, 2007). As Gibson et al. (2007: 364) rightly notice, “unless the resource is important, individuals will not incur the costs entailed in constructing institutions to manage it”. Pomeroy (2007) also acknowledges the issue of resources in his review of successful co-management initiatives across the world. Importance of the resource relates to ‘individual incentive structure’ since people “who are not dependent on a finite resource will not respond quickly to co-management” (Pomeroy, 2007: 183). Therefore, given the Waodani’s linkages to the outside worlds and their increasing exposure to the market economy, it is vital to determine whether they consider sustaining their natural resources a goal worth pursuing.

Perception of the resource problem

Once the resource is deemed important enough for community members, they might be more able to recognize problems or challenges related to its management. The perception of a resource problem is thus a prerequisite for taking management action that requires time, effort, and innovative thinking (Gibson et al., 2007: 365). The perception of the problem supplies motivation and a sense of urgency for a collective solution aimed at conserving natural resources (Holt, 2005; Gibson et al., 2007). A ‘lack of perception of the problem’ - which can reflect feelings of futility or a belief that resources will never run out - is presented in Plummer et al.’s (2012) review as the most important factor contributing to failures of both actual and potential adaptive co-management initiatives.

Finally, perception of the problem might be even more critical when collaborative efforts are taking place in indigenous communities. As arguments presented in Section 2.6.2.1 illustrate, the whole concept of managing nature in order to avoid social-ecological problems can be an abstraction to many traditional societies, and “the very idea of conservation - that restraint today will confer rewards in the future - has strong underpinnings in Puritanical and capitalist thought and tradition” (Stevenson, 2006: 169). Therefore, since the present study analyzes the indigenous context, it becomes essential to determine whether the external or scientific perception of the problem finds its reflection in the collective mind of local resource users. Finally, perception of the resource problem might have its

own unique representation in the studied SES, given the Waodani's preference for consumption over production and their notion of forever-giving forest (Section 4.3.2.1).

Acceptance of novelty

The perception of the need to change, which in my study I refer to as acceptance of novelty or openness for alternative livelihoods, is closely related to the perception of the problem in a sense that the former is a natural consequence of the latter. Therefore, in terms of institutional dynamics, it is essential that the depletion of a particular resource trigger a change in management responses (Rova, 2006). It is, however, not only the change in resource availability but also changes in the social, political and economic context surrounding a given common pool resource that can provide the rationale for considering adaptation strategies.

Reviewing the conditions for sustainable community-governed commons, Pomeroy (2007: 174) approaches 'perception of the need to change' as "common understanding [...] of alternative solutions". It is this openness to change and to testing new approaches that partly differentiates resilience thinking behind adaptive co-management from rigid top-down management approaches (Levin, 1999; Berkes et. al., 2003). Perception of the need to change can also be seen as an antithesis of 'blueprint thinking' or the adherence to the same approaches regardless of circumstances, which Ostrom (2005) saw as one of the five greatest threats to sustainable community governance. Indeed, researchers participating in Plummer and Armitage's (2007a) Delphi study identified 'robustness to solve/overcome challenges' as the most important factor contributing to success of adaptive co-management. Moreover, 'conflict of interests of those involved', which was emphasized as a critical barrier to adaptive co-management by Plummer et al. (2012) and discussed earlier in relation to 'perception of the problem', also applies to 'perception of the need to change'. Irreconcilable attitudes towards diverse management options, intransigency, and lack of flexibility can paralyze any multi-actor collaborative efforts.

Again, consideration of the issue of 'perception of the need to change' might be especially important in indigenous societies. As argued in Section 2.6.2.1, traditional societies espouse different epistemologies than their Western counterparts (O'Flaherty et al., 2008) and might be reluctant to alter behavior that has characterized them for hundreds of years. The very word 'traditional' conveys, after all, a sense of unchangeability and rigidity. Furthermore, perception of the need to change can explicitly clash with traditional culture. For instance, changing a particular unsustainable practice - such an unlimited hunting - might be challenging when this practice constitutes an inherent part of the cultural identity in a given indigenous society (Mena et al., 2000).

Thus, prior to implementing adaptive co-management in the Waodani nationality, one has to determine if ‘the perception of the need to change’ can manifest itself on the community level. This is especially important because, as argued in Chapter 4, the temporary window of opportunity might have emerged in the Waodani SES, but it requires from resource users some behavior modification and collaborative exploring of new management strategies.

Importantly, however, it has to be noted that ‘the perception of the need to change’ is conceptualized largely in terms of values that originate from external actors who use their own society as a norm. In this respect, there is the danger of equating unchangeability and rigidity on the part of indigenous people with their failure to bend to Western values and become similar to Western societies. Such reductionism in thinking about ‘the perception of the need to change’ can lead to the insufficient consideration of multiple epistemologies and, by extension, to presenting external management approaches as superior to any other approach. Instead, as Tengö et al. (2014) argue, both indigenous and scientific knowledge systems can offer management insights, and thus any co-management approach should be informed by complementarity and should point to intersections between different knowledge systems.

Openness to accept rules/ sanctions and conflict resolution mechanisms

The word ‘rules’ refers to commonly agreed prescriptions that define what actions are permitted or forbidden, and what penalties or sanctions follow non-compliance. To be effective, rules must be known to members of a community; individual members of a community need to believe that others also know and follow the rules; and there has to be some anticipation of sanctions for nonconformance. To put it differently, “working rules must be common knowledge and must be monitored and enforced” (Ostrom, 1992: 20). The enforceability of management rules - which may entail resource monitoring and sanctioning as well as conflict resolution mechanisms - is argued as crucial to successful resource management and ACM (Dietz et al., 2003; Gibson et al., 2005; Ostrom, 2005; Cundill and Fabricius, 2010). ‘Paper rules’ that are not respected by community members tend to undermine the legitimacy of common pool regimes (Dietz et al., 2003). Inducing rule compliance needs to be therefore at the forefront of any management strategy because resistance and evasion “will overwhelm the commons governance strategy” (Dietz et al., 2003: 1909). Plummer et al.’s (2012) review of relevant literature lists ‘enforcement of rules’ as the fourth most important factor contributing to success of adaptive co-management. This factor is also present in Pomeroy’s (2007) summary of the key conditions for creating institutions for sustainable community-governed commons.

In the light of the Waodani's cultural barriers related to individualism and their traditional concept of 'open territory' (Section 4.3.2), it is important to see how the concept of rules and sanctions might impact on the implementation of ACM.

Openness for education and learning

In order to bring changes associated with adaptive co-management, community members need to possess a certain level of skills and capacities (Dietz et al., 2003; Cundill and Fabricius, 2010). As argued by Pomeroy (2007: 178) and supported by diverse international multi-actor projects, "individual and community empowerment is a central element of co-management". McConney et al.'s (2003) research in the Caribbean demonstrates that stakeholder capacity enables engagement in co-management. It is a necessity for local resource users to possess capacity sufficient "to gain greater autonomy in decision making, to gain greater self-reliance, and to establish balance in community power relations" (Pomeroy, 2007: 178). Community members' openness for education and capacity building ensures social preparation and a broad participation in adaptive co-management. This is crucial in light of the fact that 'participation of relevant stakeholders in management' was listed in Plummer et al.'s (2012) meta-analysis of literature as the most important factor contributing to success of potential adaptive co-management initiatives.

As discussed in Section 4.2.2, the lack of the sufficient levels of education and skills among the Waodani prevents building resilience in their SES. Therefore, it is crucial to see whether the Waodani, given their preference for consumption over production (Section 4.3.2), are aware of the problem and willing to address it. In the present study, it is the Waodani's openness for learning that will be assessed, instead of their current capacities or skills. Indeed, capacity, skills, and social preparation can be enhanced through education and training (Pomeroy, 2007), once there is openness and willingness for these processes on the community level. Education and training, if desired and properly delivered, can narrow the epistemological gap between indigenous people and external actors (O'Flaherty et al., 2008) without diminishing the richness of the traditional culture. Learning is, however, a broad term and within the confines of the present study, it is the Waodani's willingness to participate in learning opportunities provided by external actors that will be analyzed. Indigenous or traditional forms of learning are a valuable survival tool, and they have allowed the Waodani to survive in the Amazon jungle for many centuries. Still, the recent constitutional changes require from the indigenous people to enhance their capacities in specific and narrowly defined areas. Achieving this and, by extension, being able to successfully enter into multi-scale collaboration with external actors are linked, for example, to the Waodani's negotiation and proposal writing skills (Section 4.4.1 and 4.4.3).

5.2.2.2 Grouping the ACM conditions in the methodological framework and their linkages to the barriers to resilience building

In the process of developing the methodological framework, I grouped the seven separate ACM conditions into three sets of broader conditions (Table 5.2, Figure 5.2, W₁, W₂, W₃). Firstly, I grouped social capital and leadership together under the category of ‘network-based conditions’ (W1). Both of these conditions relate to collective action that is needed for ACM by fostering horizontal (bonding) and vertical (bridging) linkages in the SES (Harpham et al., 2002; Olsson et al., 2004; Armitage et al., 2007). They are critical to enhancing mutual trust and, in turn, participation and collaboration (Djalante et al., 2011).

Table 5.1 Three sets of conditions selected for the study.

CONDITIONS	KEY WORDS	AUTHORS
Network-based Conditions		
The presence of social capital	trust, mutual assistance, friendliness, and readiness for collective action, communication, shared understanding, group cohesion, horizontal and vertical linkages	Pinkerton (1989); Pretty (2003); Folke et al., (2005); Ostrom (2005); Plummer and Armitage’s (2007a); Pomeroy’s (2007); Pretty and Ward (2011); Plummer et al. (2012)
Effective leadership	legitimate representation of stakeholders, agents of change, leadership needs to fit the goals of collaborative efforts, motivational drivers, securing vertical linkages, bring about collective action, promoting initiatives	Pomeroy et al. (2001); Olsson et al. (2004a, 2004b) ; Folke et al. (2005); Kofinas (2005); Plummer and Armitage (2007a); Fabricius and Cundill (2010); Plummer et al.(2012)
Motivation-based Conditions		
Importance of the resource	conflict of interests of those involved, the level of shared values, dependence on the resource system for a major portion of their livelihood, salience of the natural resources, individual incentives	Gibson et al. (2005); Ostrom (2005); Gibson et al. (2007); Pomeroy (2007); Plummer et al.(2012)
Perception of the resource problems	common understanding of the problem, perception of scarcity, perceiving changes in resource availability, knowledge of the resource, monitoring the resource variability	Ostrom (1990); Holt, (2005); Ostrom (2005); Stevenson (2006); Gibson et al. (2007); Plummer et al. (2012)
Action-related Conditions		
Openness for alternative livelihoods/ acceptance of novelty	common understanding of alternative solutions, resilience thinking, going beyond blueprint thinking, robustness to solve/overcome challenges, conflict of interests of those involved,	Dietz et al. (2003); Holt (2005); Ostrom (2005); Plummer and Armitage (2007a); Pomeroy (2007)
Openness to accept rules/ sanctions and conflict resolution mechanisms	rule compliance, enforcement of rules, users respect and adhere to the rules, effective strategies to avoid resistance and evasion, implementing sanctioning mechanisms, distancing from ‘paper rules’	Dietz et al. (2003); Gibson et al. (2005); Ostrom (2005); Pomeroy (2007); Cundill and Fabricius (2010); Plummer et al. (2012);
Openness for education and learning	skills and capacities, individual and community empowerment, willingness to learn, openness for new sources of information	Dietz et al. (2003); McConney et al.(2003); Pomeroy (2007); O’Flaherty et al. (2008); Cundill and Fabricius (2010);

Two other conditions - importance of the resource and perception of the resource problem - were, on the other hand, grouped under the umbrella of 'motivation-based conditions' (W_2). Both of these conditions relate to resource users' beliefs, feelings, and perceptions as far as their SES is concerned (Ostrom, 2005; Gibson et al., 2007). As such, they provide or fail to provide a motivational drive for engaging in the processes of co-management and adaptive learning aimed at enhancing the SES's resilience to face the unknown future. In other words, the importance of the resource and the perception of the resource problem represent internal sources of motivation that have to complement the network-based conditions to set the stage for ACM initiatives. While the network-based conditions determine the level of linkages and collaboration among people, the motivation-based conditions provide content and focus to these linkages. Not only do people interact with one another, but this interaction is geared towards averting problems of which they are aware and which affect the resource that is crucial to all of them.

Finally, embracing livelihood alternatives, adhering to rules and sanctions, and openness to education are grouped together as 'action-related conditions'. In contrast to the network and motivation-based conditions, the action-related conditions move beyond the potential for ACM that is social and value-based into analysing resource users' actual efforts or actions that could be conducive to implementing ACM (Dietz et al., 2003; Charles, 2007). To put it differently, the action-related conditions could shed light on whether the potential stemming from strong linkages within the SES and from a value system that is based on the importance of the resource and alertness to its problems can translate into taking concrete steps that might enhance the SES's adaptive capacity. For example, does the high importance of the resource for resource users (a motivation-based condition) drive them to undertake efforts aimed at ensuring its sustainability, such as pursuing education or introducing and enforcing management rules?

Overall, the grouping of the seven conditions presented above is, to a degree, arbitrary in nature. Furthermore, it is crucial to emphasise the network-based, motivation-based and action-related conditions are neither discrete nor self-contained. There is a significant overlaps between the three sets of conditions as there is an overlap between the seven individual ACM conditions that are underlying these sets. Although informative on its own, each set of conditions depends on as well as influences the other two sets. Therefore, in its own way, this component of the methodological framework captures the interlocked and multi-layered concept of resilience-building (Holling and Gunderson, 2002).

Finally, one of the goals in designing the study's methodological framework was linking the ACM conditions to the governance and institutional barriers as well as, underlying them, cultural barriers (Section 4.3.2). For instance, leadership is one of the ACM conditions, but corruption, inefficiency,

and passivity associated with the Waodani leadership were also listed among the underlying causes of the internal barriers that could prevent the SES from taking advantage of the emerging window of opportunity. Similarly, openness to accept rules and sanctioning mechanisms as a condition for ACM relates to the institutional barriers in the Waodani SES. Furthermore, a number of the selected ACM conditions such as, for example, social capital and the perception of the resource problem relate to the cultural barriers caused by the Waodani's excessive individualism and their belief in natural abundance.

5.2.3 The development of the methodological framework – the external actors

Instead of the seven ACM conditions that were used to collect findings about the Waodani, in the case of NGOs and the Ecuadorian State, I used a more inductive approach (Zhang and Wildemuth, 2009) to assess these actors' impacts and potential in the context of a future implementation of ACM in the Waodani SES. The reason for this is that the majority of the established conditions for ACM - such as, for example, social capital or importance of the resources - are more applicable to resource users than external actors collaborating with them. Therefore, in the case of NGOs and the Ecuadorian State, I directly referred to the factors contributing to the emerging window of opportunity discussed in Section 4.4 (Figure 5.2, EA₁) to evaluate these external actors' influence on the processes of ACM. As stated in the rationale for the study (Section 4.5), the components of the potential window of opportunity require an in-depth analysis to determine whether they can, indeed, assist the Waodani SES in escaping from the poverty trap and transitioning towards adaptive governance. Therefore, I planned to discuss the following factors during focus groups and individual interviews:

- New Constitution and laws
- Economic opportunities
- Learning opportunities
- Multi-actor collaboration

Furthermore, in the case of NGOs and the Ecuadorian State, I anticipated a number of specific themes or sub-categories to emerge during the data analysis stage. These themes or sub-categories would constitute structural units for a textual data analysis to assess the external actors' impacts on future consideration of ACM in the Waodani. Therefore, the method applied to the external actors reflects to a greater degree the premises of the inductive approach to data analysis, where specific themes are not superimposed on the study prior to its commencement, but are, instead, expected to emerge during data analysis efforts (Zhang and Wildemuth, 2009).

Overall, however, as in the case of the Waodani, the collected data will be analysed in the context of the four characteristics of adaptive governance which is a prerequisite for successful ACM and which this management approach operationalizes (Folke et al., 2005; Plummer et al., 2013) (Figure 5.2).

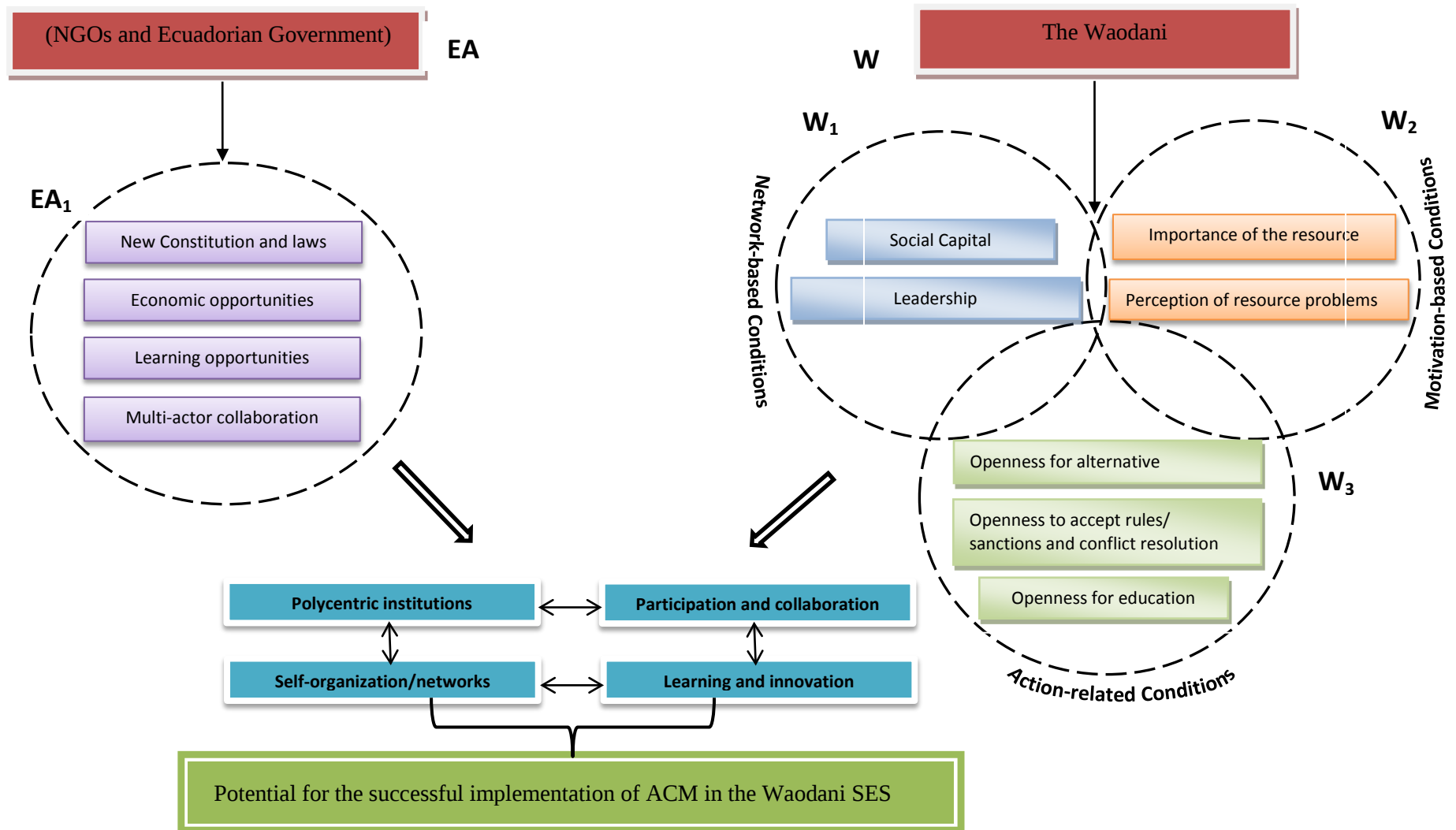


Figure 5.2 Framework for the evaluation of the potential for ACM in the Waodani SES: External Actors (EA) and the Waodani (W).

CHAPTER 6

METHODS

6.1 INTRODUCTION

In this chapter, instruments of data collection are discussed. Furthermore, a rationale for selecting the study's participants and the role of different groups of participants in relation to the study's objectives are presented. Finally, all the processes involved in data collection and analysis are described in detail.

6.2 RATIONALE FOR USING QUALITATIVE METHODS OF DATA COLLECTION

6.2.1 Focus groups and interviews

Uncertainty and unpredictability inherent in the Waodani SES cannot be sufficiently grasped by quantitative models, since there is “no one ‘correct’ numerical answer” to guide social-ecological systems management (Berkes et al., 2003: 7). Building resilience - a concept which, in itself, is not objective within nonlinear social-ecological systems – requires therefore applying qualitative thinking. In the case of the present study, there were also some specific reasons that supported using qualitative methods. In terms of the Waodani, focus groups offer participants an opportunity to address the themes of the research on their own terms without being limited by a rigid survey structure (Robson, 2002). Such an opportunity can take the study into new directions and reveal attitudes, views, and perceptions that a survey prepared by an outsider cannot (Halfpenny, 1979; Hoepfl, 1997; Patton, 2002). Furthermore, during a focus group, participants can interact with one another, confirming or discounting the validity of individual statements and thus enhancing the study's synergistic quality (Creswell, 2003). In other words, the more open structure of the focus group format provides an opportunity for incorporating insights that an externally constructed quantitative questionnaire might fail to consider. An in-group setting with its cultural familiarity can put participants at ease – an important factor when dealing in an indigenous context – and facilitate communication, which, in turn, can lead to obtaining more insightful and in-depth information (Tajfel, 1978; Berry, 2003; Eaves, 2009). In addition, the focus group format relates closely to the predominantly oral Waodani culture (Yost, 1981; Robarchek and Robarchek, 1998; Rival, 2002). By approximating the way in which information has been transmitted and shared in this indigenous society for centuries, focus groups can thus gather rich, spontaneous, insightful, and internally-generated data.

This is an especially valid argument since, to my knowledge, there is no questionnaire that has been validated and used with indigenous people in the Ecuadorian Amazon in relation to assessing their readiness for ACM. In light of this fact, I was reluctant to employ my own unvalidated and, possibly, culturally inappropriate questionnaire (Embretson, 1983; Hui and Triandis, 1989; Van de Vijver and Tanzer, 2004). In the context of such a different cultural reality as the one represented by the Waodani, the danger of construct bias always exists (Van de Vijver and Tanzer, 2004). Therefore, the “universal (i.e. culture-independent) validity of the underlying psychological construct” might be difficult to establish and even more difficult to quantify (Van de Vijver and Tanzer, 2004: 121).

In general, therefore, my intention was to obtain data in a way that is more familiar and less culturally-foreign to the participants. As argued in section 1.2.2, some profound epistemological differences exist between Western societies and traditional societies in obtaining and interpreting knowledge (Feit, 1986; Kofinas, 2005; Paradies et al., 2008). In relation to this issue, Gilchrist, L. (1997) argues, for example, that Aboriginal community participation and ownership of research are hard to convey through positivistic and quantitative approaches. Furthermore, as Kenny et al. (2004: 12) state “quantitative methodologies are not always conducive to the way things are done in Aboriginal contexts”. In contrast, “qualitative methods are perceived to be flexible, open to alternative ways of knowing, easily adaptable to cultural contexts, encouraging a high level of community control over the research process” (Cameron et al., 2010: 97). This is the view shared and expressed by other researchers such as Baum (1995), Hines (1993), Johnson and Onwuegbuzie (2004), Kenny et al. (2004), and Sale et al. (2002). It is summarized in the statement by Kenny et al. (2004: 12) that “qualitative research methods that include individual and group interviews, focus groups and participant observation are often more compatible [than quantitative methods] with Aboriginal culture”.

However, as stated in the ‘limitations’ section of the present study, I believe that, in future research studies, it would be worthwhile to compare the qualitative findings obtained in the present research with quantitative data. Such a mixed method approach would allow for forming generalizations to complement the scope and depth of the qualitative research. Furthermore, it needs to be acknowledged that the presence of the moderator can affect the outcome and data collection during focus groups since “we can never be sure how natural the interactions are” (Morgan, 1988: 16). Finally, the emergence of ‘group think’ can influence the participants to side with dominant views and beliefs and thus engender conformity (Janis, 1982).

On the other hand, in practical terms, individual interviews were the only feasible approach for collecting data from external actors and selected Waodani leaders. Contrary to focus groups, individual interviews allow participants to keep their statements entirely confidential. This is

important, given the fact that some of the selected participants work for or negotiate Waodani's matters with the Ecuadorian government, while others represent oil companies and international NGOs. Therefore, many of these participants might prefer a research context that ensures their confidentiality in order to be able to talk freely about the highly charged economic and political climate that surrounds multi-actor activities in the Yasuni Biosphere Reserve (Narváez Quiñónez, 1996; Toledo and Ponce, 2001; Ziegler-Otero, 2004).

6.2.2 Participant observation

Some of the important data related to the topic of the study were also collected in a less structured or formal way. In fact, I am a PhD researcher studying the Waodani SES as well as an ex-employee of an international NGO (WCS) that has been involved with the Waodani communities for many years. This unique position allowed me to supplement collected qualitative data with rich observational findings.

I was working with a number of the Waodani communities - especially, Kiwado, Guiyedo and Timpoka - for almost six years, from September, 2007 until February, 2013. Overall, I visited some of the communities on at least 15 different occasions and each time spent there at least 3 days. I also had some previous interactions with the community of Batabudo because of various events and meetings. Furthermore, I participated in training initiatives (e.g., GIS, navigation, geography, ecology) offered to the Waodani, the development of community management plans for Kiwado, Guiyedo and Timpoka, the implementation of the Socio Bosque program, and in community mapping activities. I also took part in meetings devoted to reviewing the Waodani nationality statutes and in negotiations regarding management priorities for the communities.

My frequent and extended presence in the Waodani communities has provided me with opportunities to learn about the Waodani's behavior, attitudes, interests, needs, values, hopes, and capacities to learn. I also have had a chance to observe their interactions with other people and to see how open they were to new ideas and management approaches. Finally, I spent countless hours immersed in conversations with the Waodani - young and old, men and women, educated and uneducated. The relaxed and informal nature of these conversations allowed the Waodani to open up and express their deeply-held views and beliefs (Dowler, 2001).

Finally, all throughout the study period, I kept records of all my interactions with the Waodani. Each night, I would systematically write down all that I learned and experienced during the day. In my approach, I followed the format suggested by Burgess (2000: 167) in his book about field research. He states that "field notes consist of a continuous record of the situation, events and conversations in

which the researcher participates. They are a record of the observations and interviews that are obtained by the researcher and of the content of documents”.

Altogether, therefore, I believe that my first-hand experiences with the Waodani and the record of these experiences greatly complement more rigorous and structured qualitative data (Burgess, 2000; Dowler, 2001). Still, it needs to be acknowledged that my position within WCS might have influenced the statements of some of the Waodani with whom I interacted. They might have been less forthcoming in expressing their views and beliefs. I tried to overcome this potential problem by creating a friendly atmosphere that engenders trust and openness and by expressing a genuine appreciation of all opinions and attitudes.

6.3 DATA COLLECTION

6.3.1 Focus Groups

As shown on Figure 6.1, focus groups conducted with the Waodani community members had two main purposes:

- Apply the seven ACM conditions grouped into the three sets (Section 5.2.2) to collect data from the Waodani about their own readiness for the processes of ACM.
- Apply the factors contributing to the emerging window of opportunity (Section 5.2.3) to collect data from the Waodani about NGOs’ and the Ecuadorian State’s readiness for the processes of ACM.

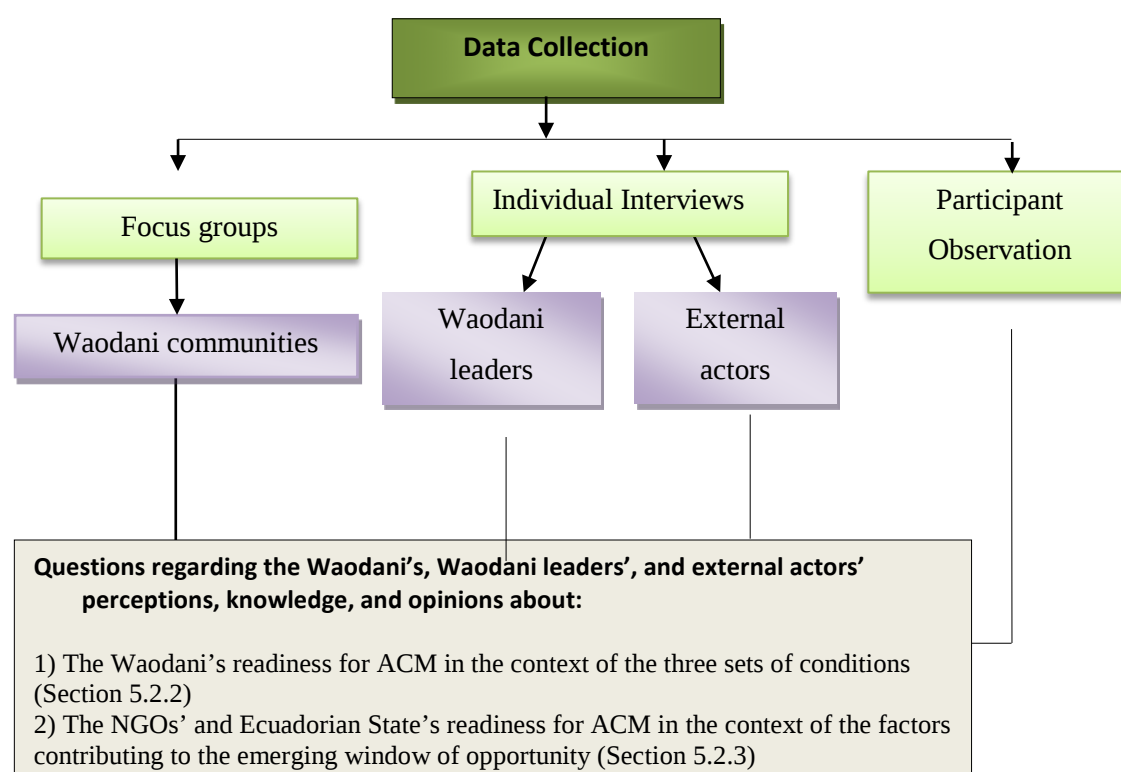


Figure 6.1 Data collection scheme.

Importantly, prior to initiating focus groups, I conducted a pilot study (a focus group) with six Waodani community members to see how they responded to my questioning approach and how interested they were in topics selected for the discussion. This pilot study provided me with insights and ideas for constructing a semi-structured focus group guide. The description of the pilot study and the semi-structured focus group guide developed as the result of this study are included in Appendices 3 and 1 respectively.

In terms of conducting my focus group interviews, I notified the president of each community that I would be collecting data for my analysis and asked his permission to interview members of this community. On the day of my arrival, I would organize a short gathering in the community meeting space (a school or community aula) to explain the purpose of my research and to invite the Waodani to participate in focus groups. My initial intention was to request participation of only those Waodani who could communicate in Spanish. I am not familiar with the *Wao tededo* language and I thought it would be impossible for me to conduct focus groups in the Waodani's native tongue. Still, I reconsidered this decision and included both Spanish-speaking and *Wao tededo* -speaking Waodani in the study, because a broader sampling base would increase the study's scope, depth, and reliability (Robson, 2002). On the other hand, however, I realize that having a translator could disrupt the natural flow of focus group discussions and might lead to some inaccuracies in collected findings. These facts need to be acknowledged, therefore, as some of the study's limitations.

Overall, six focus groups were conducted (two in each community). Five focus groups had six participants and one focus group had seven participants. Men and women, including both younger and older community members, participated in the study. Having different genders and age-groups in the study was important for a number of reasons. Firstly, my own professional experiences as well as previous research data point to differences between the younger and older Waodani (Aviles, 2008). There appears to a greater willingness on the part of younger Waodani to collaborate with external actors and benefit from the educational opportunities that have emerged in the SES. This might be partially attributed to younger Waodani's greater exposure to the external world and their stronger Spanish speaking skills (Aviles, 2008). Therefore, I intended to obtain a sample of participants that would be reflective of these potential differences.

Similarly, there could be differences between Waodani men and women in terms of management priorities and expectations. Again, my own expectations, which are corroborated by earlier research (e.g., Aviles, 2008), indicate that, in general, Waodani women are more preoccupied than men with healthcare, educational services, and daily family life, and they are more likely to be concerned about the negative effects of the oil industry on natural resources and traditional livelihood options. If, for many men, the oil industry is a provider of employment and thus cash, for women, it is a potential

threat to the long term sustainability of the SES (Aviles, 2008). These differences between genders could stem from Waodani women's greater concern for the well-being and future of their children. In fact, the gulf between the Waodani men's and women's visions of management priorities for the SES contributed to the creation of the Waodani women's leadership organization, AMWAE (Aviles, 2008). As a result, to account for potential between differences between genders in terms of leadership goals and priorities, I made sure that, apart from men who are members of NAWE, female representatives of AMWAE participated in the study. Gender and leadership differences between the study participants are described in Appendix 6.

Prior to commencing each focus group, I gave the participants information sheets and consent forms, explained the purpose of the group, and asked each person to sign the consent form if he or she agreed to participate. There were no incentives, financial or any other type, offered to the participants. Each focus group lasted about an hour and fifteen minutes and took place in the communities (communal meeting places, schools) during the time that was convenient for all the participants. My digital voice recording device was turned on throughout the interviewing process. To protect the identity of people participating in the study, each participant was assigned a code that can be found in the Appendix 5.

In terms of methodological considerations, I employed a direct approach method to obtain data (Potter and Levine-Donnerstein, 1999; Hsieh and Shannon, 2005). In specific terms, I would proceed with general "questions about the predetermined categories" (Hsieh and Shannon, 2005: 1281). Depending on the participants' answer, I would follow up these general questions with more specific contextual inquiries. In general, all throughout the interviewing process, I referred to the semi-structured guide developed on the basis of the qualitative pilot study with the Waodani people. Of course, in each case, I remained flexible to re-ordering particular questions or changing/rephrasing them, depending on the flow of the discussion (McCracken, 1988).

As a first step, prior to collecting any data, I obtained ethics approval for conducting the study from Rhodes University. Following the university's guidelines and in accordance with other internationally-recognized regulations (e.g., BPS, 2009: 12), I obtained 'the informed consent' of participants and made sure that they had adequately understood the nature of the study and its consequences. The original Spanish-language consent form and its English version are included in Appendix 7. Furthermore, throughout the process of data collection, there was no "deception or subterfuge" on my part (BERA, 2011: 6). All the participants were told how the collected data would be analyzed and presented (BERA, 2011: 5), and in all the stages of the study, they were "treated fairly, sensitively, and with dignity" (BERA, 2011: 5-7). Importantly, no financial compensation or any other form of inducement was used to motivate the participants to take part in the study BPS (2009: 19).

I also made sure that their input was appreciated and that their dignity and well-being were not harmed in any way (Burgess, 1989). Therefore, I was careful not to pursue issues which might have been painful for the participants or which might closely relate to their personal lives (Burgess, 1989). In addition, throughout the interviewing process, I made sure that the questions I posed were not leading in any way. Therefore, a vast majority of my questions were Yes/No questions followed by questions starting with “What”, “When”, “Where”, and “Why” McCracken (1998).

Finally, I had to ensure that my personal views and opinions did not impact on the interviewing process. I have been working with the Waodani people and other actors impacting on the SES for a long time, and that is why it was important for me to consciously avoid suggesting my attitudes towards particular statements. This is a crucial issue to address. As a representative of the international conservation organization (WCS), I believe in and identify with convictions, approaches, and philosophies that constitute the core of this organization’s mission to “save wildlife and wild places across the globe” (<http://www.wcs.org/>). Therefore, all throughout the interviewing process - both in the case of focus groups and individual interviews - I remained non-judgmental and equally appreciative of all the input (Wilkinson, 1988). I achieved this through an ongoing reflexivity that helped me to remain aware of the possibility of signaling my own attitudes and biases and to control for this risk (Wilkinson, 1988).

6.3.2 Individual Interviews

As shown on Figure 6.1, individual interviews had two main purposes:

- Apply the seven ACM conditions grouped into the three sets of conditions to collect data from various external actors and selected Waodani leaders about the Waodani’s readiness for the processes of ACM.
- Apply the factors contributing to the emerging window of opportunity (Section 5.2.3) to collect data from various external actors and selected Waodani leaders about NGO’s and the Ecuadorian State’s readiness for the processes of ACM.

The semi-structured focus group guide also served as a basis for developing a semi-structured interview guide. I made, however, some modifications to the latter, given the fact that, contrary to focus groups, in each case there was only one person conversing with me. Therefore, I prepared more hypothetical follow-up questions for individual interviews because, again, in contrast to focus groups, there would no group-generated exchanges following a given question. The semi-structured interview guide is included in Appendix 2. All the participants received the information sheet that explained the nature of the study and the consent form which they signed once they had agreed to participate in the study.

The following five different groups of participants were selected to take part in this component of the study. A description of institutions, main organizations, and companies they represent can be found in the Appendix 4.

1. *Government representatives who have been working with or have been associated with the Waodani communities.*

As discussed earlier, the adoption of the New Constitution (2008) and the introduction of the COOTAD led to the implementation of the decentralization model in dealing with indigenous communities. As a result, the devolution of powers from central government to autonomous decentralized governments (Gobierno Autonomo Decetnralizado (GAD)) that are operating on provincial, municipal, and parish level took place.

The new system of territorial organization and planning requires GADs to support territorial management and economic development of indigenous communities. These indigenous communities are, in turn, encouraged to actively participate in the GADs' annual local development planning and budget assemblies and are given a forum to express their needs and expectations in relation to government funding opportunities. The philosophic shift in the government's approach to dealing with indigenous communities provides the Waodani with the voice and influence which they were historically denied. It also makes the government a permanent partner in any future collaborative efforts with this nationality. Therefore, in order to evaluate possibilities for ACM in the Waodani communities, it is crucial to analyze views and perceptions emerging from the different levels of the Ecuadorian government. Firstly, such information will provide an additional perspective on the Waodani's readiness for participating in ACM. Secondly, government representatives – similar to all the other external actors - can express opinions about external actors' knowledge about the Waodani people and their attitudes towards collaborating with the Waodani in the processes of adaptive co-management.

I decided to talk to government representatives from Pastaza and Orellana provinces where the majority (~85 percent) of the Waodani lives. To obtain a greater degree of comprehensiveness, I chose government representatives from different levels of the Ecuadorian government structure. In total, I interviewed 17 government officials from both Orellana and Pastaza. The coding of the government representatives can be found in Appendix 6.

2. *Representatives of NGOs (non-governmental organizations and universities) that have been collaborating with the Waodani.*

NGOs and education institutions operating in the communities play an important role in the development of community-based projects, strengthening institutional and local capacities, and linking the Waodani to various external actors. They have different levels of relations with indigenous people and the Ecuadorian government, depending on the type and scale of projects with which they are involved. In some cases, as with WCS, the collaboration between the NGO and the Waodani took place in the past, is currently being implemented, and will likely continue into the future. In other cases, such as UNESCO, there were some general collaborative efforts on the regional level but there might be more specific collaboration in the future. Finally, there are NGOs, like *Fundacion Natura*, that were involved with the Waodani communities for relatively short period of time but no longer are in the SES.

Despite some volatility in NGOs' involvement with the Waodani nationality, it is beneficial to include them in the study. Most likely, some of the interviewed individuals and organizations which they represent will continue to play an important role in future collaborative effort in the Waodani territories. Their views about the Waodani and their attitudes towards them as well as their opinions about all the external actors involved in the management processes in the YBR – such as the state, NGOs, and oil companies – will help in evaluating the overall potential for adaptive co-management. Furthermore, apart from their direct contribution to the future developments in the region, NGOs leaders are also – similar to government representatives – the source of historical, anthropological and socio-economic knowledge of the Waodani nationality.

I talked to representatives of major NGOs that had been working with the Waodani either directly or through regional projects. In total, I interviewed 13 people. The coding system used to ensure anonymity applied to all the participants can be found in the table in Appendix 6.

3. *Officials from oil companies and consulting companies that have been operating in the Waodani territories.*

Repsol-YPF and Petrobell Inc. are two of the main private oil companies that are currently operating within the YBR and that have a long relationship with the Waodani nationality. Unfortunately, I was refused an interview with Petroamazonas; that is the state operated oil company. As already discussed, decades-long relationship between oil companies and the Waodani has contributed to profound socio-economic, ecological, and cultural changes in the territories. On one hand, the oil industry has served as a provider of local employment and has helped in establishing medical and educational facilities. On the other hand, however, the extractive industry has contributed to ecological degradation in the region and to social, cultural, and familial disruption in the Waodani

communities. Still, given the importance of oil-generated revenues for the Ecuadorian economy, the oil industry is likely to remain present in the YBR for the foreseeable future (Guaranda, 2010). In light of this reality, it is necessary to include this crucial external player in the discussion about the possibility for ACM in the Waodani communities. Therefore, I interviewed three employees from two private oil companies operating in the Waodani SES, one employee of a State-led company, and one employee of a consulting company working for the Repsol-YPF with the Waodani nationality. The coding system used in the study to ensure anonymity can be found in the table in the Appendix 6.

4. Researchers and specialists who have been interested in the Waodani nationality and have been familiar with issues concerning these indigenous people.

I also discussed the Waodani and their social-ecological context with some of the researchers and specialists who have studied, worked with, and written about this indigenous society and its modern challenges. I expected that this group of participants could enhance the evaluation of the SES by combining their first-hand experiences with their knowledge of the relevant research sources. Furthermore, the input of specialists and researchers could be helpful in corroborating or contradicting other qualitative data concerning the Waodani's and external actors' level of readiness for adaptive co-management. These participants' mostly sociological or anthropological interests in the Waodani people render their opinions potentially less partial than those of the participants who are currently economically and politically engaged in the communities.

The selection process employed in this part of the study reflected my own professional and intellectual journey. I chose researchers whom I had known through my work-related involvement with the Waodani people or whom I had acquainted in the processes of preparing for and writing the literature review component of this thesis. Overall, I had an opportunity to interview 6 people from this group, and the coding of the participants to ensure their anonymity can be found in the Appendix 6.

5. Waodani leaders who were chosen to participate in the study due to their interactions with and knowledge about external actors.

The inclusion of Waodani leaders in the study is important for a number of reasons. Firstly, their position of being both representatives of the indigenous society and participants in external collaborative efforts offers a unique perspective on the potential for ACM in the YBR. Indirectly, they can shed light on the relationship between the Waodani culture and their institutional framework and the demands imposed by functioning within a system of externally-devised regulatory policies. Secondly, information from this group of participants will allow for the greater triangulation of the research data. It is expected that the Waodani community members participating in the study, the selected Waodani leaders as well as the interviewed external actors will express a variety of opinions

about the Waodani SES. These opinions might be diverse. In light of this fact, interviews with the Waodani leaders will provide an opportunity to confront and compare various sources of data. Thirdly, the Waodani leaders can corroborate, contradict, or complement the previously collected information about the external actors as the partners of the Waodani in implementing adaptive co-management.

Finally, these interviews will allow for the collection of information about emerging Waodani leaders' potential in the context of any future ACM. Imperfect as it might be (Ziegler-Otero, 2004), this generation of the Waodani leaders will likely determine the fate of collaborative efforts in the communities. With the Waodani nationality no longer adhering to egalitarianism and with the external actors' demands for the legitimate indigenous representation, the role of leaders will remain critical into the future (Yost, 1981; Ziegler-Otero, 2004; Aviles, 2008).

Appendix 6 provides the codes used to ensure anonymity of the Waodani leaders with whom I had an opportunity to conduct individual interviews. In total, I interviewed 11 leaders, which includes NAWA leaders (men) and AMWAE leaders (women).

The description all these five groups, their importance within the SES, and the rationale for including them in the study are presented in the Table 6.1.

Table 6.1 Rationale for the selection of participants for individual interviews.

Research Participants	Rationale for the selection	Sample N
Government	- Has become a permanent partner and an influential stakeholder in any collaborative efforts with the Waodani SES - Constitutes a source of historical, anthropological and socio-economic knowledge about the Waodani nationality	17
NGOs/Universities	- Play an important role in the development of community-based projects, strengthening institutional and local capacities, and in serving as 'bridging' organizations - Will, most likely, continue to play an important role in future collaborative efforts - Constitute a source of historical, anthropological and socio-economic knowledge about the Waodani nationality.	13
Oil companies (Private, State-owned and consulting companies)	- Have contributed to profound socio-economic, ecological and cultural changes within Waodani SES. - Remain an important actor within the SES - Constitute a source of historical, anthropological and socio-economic knowledge about the Waodani nationality.	5

Specialists/Individual Researchers	• Enhance the evaluation of the Waodani nationality through their first-hand experience and research • Can corroborate or contradict other qualitative data concerning the Waodani's and external actors' level of readiness for adaptive co-management.	6
Waodani Leaders	• Represent a link between Waodani nationality and external stakeholders and thus shed light on the potential of ACM in the SES. • Can corroborate, contradict, or complement the previously collected information from Waodani participants about the external actors • Play a crucial role in determining the fate of collaboration efforts in the communities	11

I contacted all the participants selected for individual interviews, including Waodani leaders, by phone or once I was visiting their office in Quito, Coca, or Puyo. We set up interviews at the time that was convenient for them, and these interviews took place in their offices or, in the case of some Waodani, in the communities during my visits there. In each case, I explained to the participants the purpose of my research and assured them that their participation would be kept confidential and that their identities would be coded in my thesis.

Prior to conducting individual interviews, I explained to the participants, once again, that our discussion would be taped and then, parts of it would be transcribed and included in the thesis. I also asked the participants to read the information sheet explaining the purpose of the study and what was expected of them. All of them read this information sheet and signed the attached informed consent form. Finally, in terms of ethical concerns and reflexivity, I followed the same approach that I employed during the focus groups with the Waodani community members (Section 6.3.1).

6.4 APPROACH TO DATA ANALYSIS

6.4.1 Overall methodological approach

In the data analysis stage, I chose not to employ any computer assisted data analysis software. There were a number of reasons behind this decision. Firstly, qualitative research is openly subjective in its methodology and acknowledges the fact that the findings are interpreted by the researcher who closely engages with the interview transcripts (Fielding and Lee, 2002). I intended therefore to avoid the reality of being somewhat alienated through the introduction of strategies that reduce the context-relatedness of interaction (Ryan et al., 2009). Secondly, the amount of the collected data was significant but not overwhelming in a way that would prevent manual coding. Finally, I have done the manual coding and analysis of qualitative findings many times before, both as a graduate student and as an employee in the consulting industry. I believe therefore that employing the data analysis

approach in which I am especially proficient would further ensure the reliability and trustfulness of the study (Robson, 2002).

In specific terms, procedures that I used to analyze transcripts from focus groups and individual interviews employed an approach developed by McCracken (1988). McCracken (1988) proposes a five-stage data analysis, with each consecutive stage providing a greater specificity to the process. It is based on an on-going revision and refinement of earlier ideas or assumptions. One of the benefits of this approach is its explicit nature which allows for recreating steps taken by the researcher and thus ensuring the reliability and trustworthiness of a given study (Robson, 2002).

Firstly, I carefully transcribed all the recorded materials and translated them from Spanish into English. Altogether, I had six hours of recording from the focus groups and about fifty hours of recording from the individual interviews. During transcribing and recording, I tried to be as faithful to the original text as possible, but, on occasion, I corrected some grammatical structures and rephrased idiomatic expressions. Furthermore, as already stated, each participant was assigned a code to ensure his or her anonymity. Given the fact that the amount of the collected qualitative data was considerable but not overwhelming, I decided not to use a computer program in the data analysis stage (Robson, 2002). Therefore, throughout all the stages of the analysis, I used different pens, markers, and paper stickers to write down my comments and highlight individual statements of the study's participants.

The first stage of the process proposed by McCracken consists of the researcher approaching the transcript without any preconceptions and established ideas. Each sentence is viewed in isolation from the text as the whole, and the researcher is not concerned how a given sentence relates to all the other sentences. As McCracken (1988: 44) states, "the investigator acts much like an archeologist, sorting out important material from unimportant material with no attention to how the important material will eventually be assembled". The second stage of the analysis relates sentences to one another, in terms of similarities and differences between them. In other words, individual utterances are no longer considered on their own, but they are, instead, viewed as a part of the larger structure.

In the third stage, according to McCracken (1988: 45), "general properties of the data should be emerging". The researcher approaches participants' statements with concepts and ideas already taking form in his or her mind, and refers to the transcript "only to confirm or discourage developing possibilities" (McCracken, 1988: 45). In the fourth stage, the researcher organizes data in a more refined manner. Aspects that do not reveal a connection to the research questions are removed, while the remaining relevant aspects are hierarchically addressed in the study. Finally, in the fifth stage of the study, the collected themes and sub-themes are compared to one another in order to arrive at the

higher level of comprehensiveness. The researcher pays attention to both congruencies and disparities in the collected thematic material and uses the findings to address the overall research questions.

6.4.2 Approach to data analysis concerning the Waodani's readiness for ACM

In terms of the overall structure, the same five-stage approach was applied both in the case of the data related to the Waodani people and in the case of the data related to the external actors. Still, there were some important differences in the methodological processes leading to the final organization of the analyzed data. Firstly, as described in Section 5.5.2, collecting data concerning the Waodani's readiness for ACM followed the premises of a deductive approach to data analysis. Therefore, in the data analysis stage, the information contained in the transcripts from the focus groups and individual interviews was further sub-divided into themes and used to substantiate the seven ACM conditions which had been selected prior to the commencement of the data collection. These conditions were based on findings from the relevant literature (Section 5.2.2.1). They were also related to the barriers contributing to the poverty trap in the Waodani SES and thus impacting on the SES's ability to take advantage of the emerging window of opportunity (Section 4.3, Figure 4.2). Furthermore, the analysis employed to evaluate the Waodani's readiness for ACM adhered to the subdivision of the ACM conditions into network-based, motivation-based, and action-related conditions. Finally, all the analyzed data were used to address the first objective of the study: the readiness of the resource users and the primary managers of the SES (the Waodani) for future consideration of ACM.

6.4.3 Approach to data analysis concerning the external actors' readiness for ACM

In contrast to the data related to the Waodani, the method used to collect data about the external actors was mostly inductive in nature. In this approach - largely aligned with grounded theory (Glaser and Strauss, 1967) - themes and categories are expected arise from "the data rather than being imposed on them prior to data collection and analysis" (Patton, 1980: 306).

As explained in Section 5.2.3, in regards to NGOs and the Ecuadorian State, the factors related to the potential window of opportunity (Section 4.4) guided discussions during focus groups and individual interviews. However, in the data analysis stage, a number of more specific themes concerning the external actors' readiness for ACM emerged that would serve as a source of data to address the research objectives. Following this approach, in the case of NGOs, the following major themes were identified, with each theme having its own set of sub-themes:

- Perception and values
- Collaborative processes in relation to the Waodani
- Collaborative processes among organizations
- Funding

As far as the Ecuadorian State is concerned, the following themes emerged, again, with each theme having its own set of sub-themes:

- Values and perceptions
- Collaborative processes in relation to the Waodani
- The level of trust towards the Waodani
- Funding
- Collaborative processes on the State level
- State level policies

As in the case of the Waodani people, all the collected and analyzed data were used to address specific research objectives. In terms of the external actors, these objectives were as follows:

Objective 3:

- To assess the role and impacts of NGOs in facilitating future implementation of ACM in the SES.
- To assess the role and impacts of the Ecuadorian State in facilitating future implementation in the SES.

Finally, after separately discussing the research objectives related to the Waodani's and the external actors' readiness for the consideration of ACM in the Waodani SES, the final research objective was addressed:

- To determine the overall potential for implementing ACM in the Waodani SES, given the opportunities and challenges emerging from the analysis of the Waodani, NGOs, and the Ecuadorian State.

In addressing this objective, I discussed overall implications stemming from the previous research questions in the context of the characteristics of adaptive governance which constitutes a prerequisite for successful implementation of ACM (Olsson, 2007; Sections 2.5.1 and 2.5.2).

6.5 ETHICAL CONSIDERATIONS IN DATA ANALYSIS

In the data analysis stage, it is incumbent upon the researcher to be cognizant of ethical concerns. Participants might reveal personal or sensitive aspects related to themselves and others, and it is the researcher's responsibility to determine whether some of these statements should be included in the thesis. In other words, the researcher needs to use his or her own judgment and reflexivity to avoid

hurting participants in any way. Furthermore, the researcher needs to make sure that his or her own biases and views do not affect the process of data analysis (Wilkinson, 1988).

Therefore, the issue of reflexivity becomes especially important during the data analysis. As Sparks (2002: 127) states, it is necessary to “confront our own theoretical, personal, and professional biases and begin to move beyond them”. Being aware of any potential bias or subjectivity and safeguarding against this can enhance the research study (Maso, 2003). It is for this reason that I included extensive parts of the transcripts from the focus groups and individual interviews in the thesis. Such an approach not only enhances the analytical part but also allows readers to draw their own conclusions about the topics addressed in the study (Finlay and Ballinger, 2007). A greater objectivity and inclusiveness of the study can also be achieved by discussing personal views and attitudes with colleagues and supervisors (Arvay, 2003). In this way, some biases and unsubstantiated beliefs can be pointed out to the researcher and thus prevented from affecting the quality of the submitted work. I am therefore greatly appreciative of my supervisor’s, Prof. Shackleton, guidance and advice throughout the process of data analysis. Her invaluable input encouraged me to self-reflect and thus rendered the study more trustworthy.

Finally, the potential for bias in analyzing the statements referring to my employer, WCS, needs to be addressed. Never during the writing study was I under any pressure to present WCS in a favorable light or change or adjust my findings in any particular way. No financial or professional inducement was offered to me by my employer in the process of writing this thesis, and none of WCS’s employees has read any part of my research. I did all the data collection and writing on my own time and at my own expense. Furthermore, there could be no connection between the submission of this thesis and my professional career within WCS. In fact, in January, 2013 – more than one year prior to my submission of the thesis - I informed my superiors at WCS that I would be leaving the organization and returning to Canada, which I did in July, 2013. Therefore, I am currently not an employee of WCS or any other organizations whose impact on the Waodani SES was discussed in the study.

PART 3: EMPIRICAL FINDINGS AND THEIR ANALYSIS: READINESS FOR ACM

CHAPTER 7

READINESS OF THE WAODANI FOR FUTURE CONSIDERATION OF ACM

7.1 INTRODUCTION

In this Chapter, the Waodani's readiness for ACM, as perceived by both members of the Waodani themselves and different external actors, is analyzed in light of the pre-selected conditions for ACM and the framework presented in Chapter 5. In terms of the overall structure of this chapter, the findings are grouped according to three types of conditions: network-based, motivation-based, and action-related. However, the discussion emphasizes the complexity and a certain fluidity or interconnectivity among these conditions. In each case, a number of more specific themes were identified to better address the relative presence of each ACM condition. The final part of the chapter (Section 7.5) provides an integrated answer to the research question related to the Waodani's readiness for ACM.

7.2 DISCUSSION OF FINDINGS RELATED TO NETWORK-BASED CONDITIONS

7.2.1 Social Capital

As argued in Section 5.2.2.1 and further discussed in Section 5.2.2.1, strong social capital is essential for the implementation of collaborative processes because it fosters relations and enhances trust among partners. In the present study, levels of horizontal capital in the four communities representing the three research areas (Section 5.2.1)²³ were assessed by considering the presence and perceived importance of specific practices that facilitate social interaction and, by inference, social cohesion.

Participation in culturally significant activities

The Waodani's adherence to sharing *chicha* and other foods as well as their participation in *mingas* can help in assessing the levels of social capital in the selected communities. *Chicha* is a drink usually made from pre-masticated manioc and other crops, and it constitutes a culturally important form of nourishment for the Waodani (Holt et al., 2004). Sharing *chicha* creates social space to chat, tell stories, and participate in various community activities as well as to discuss management problems and search for solutions (WCS anthropologist, pers. comm.). In Kiwado, a sense of connectedness to one another is still maintained by sharing *chicha* during social encounters:

²³ For the purpose of the discussion and because of the factors identified in Section 5.2.1, I included the community of Timpoka under the description of Guiyedo. This is why I am referring in the text to three instead of four communities that participated in the study.

When somebody comes to our house, we always give them something to eat and they usually share chicha with us (Participant #1.2, Kiwado).

I always have chicha and if someone comes to my house, we drink it together. Everybody in community shares chicha with each other (Participant #2.2, Kiwado).

The concept of sharing also extends to consuming collectively hunted wild game and fish. On many occasions, when visiting Kiwado, I noticed that freshly hunted animals were readily divided among community members and consumed together. The continuation of this tradition was confirmed during the focus groups:

We share meat with everybody after hunting or fishing. It is important for us to share because it is what we have always done it as Waodani (Participant #1.4, Kiwado).

When someone comes to my house, he can take some food when he is hungry. This is how our grandparents lived and we want to continue it (Participant #1.3, Kiwado).

Sharing *chicha* and other food points to Kiwado residents' continuous adherence to the demand-sharing (Section 4.3.2) in spite of having been introduced to the market economy. As Holt et al. (2004: 63) state, "in terms of inter-household exchange, it has been said that for the Huaorani, to deny someone food who asks for it is basically to negate any type of relationship with that person". Therefore, in Kiwado, sharing food and *chicha* demonstrates a considerable strength of horizontal linkages (bonding social capital) (Harpham et al., 2002; Olsson et al., 2004; Armitage et al., 2007; Sections 2.5.2 and 5.2.2.1) among community members that could be important for generating collective action supportive of ACM. On the other hand, however, using the traditional food sharing among the Waodani as a proxy for social capital and, in turn, collective action needs to be done cautiously and with some reservations. The differences between the communities in adherence to this tradition might stem from a number of factors, some known and some unknown. Therefore, determining the strength of the relationship between food sharing and social capital or collective action would greatly benefit from further research.

The level of social capital in the Waodani communities can also be tentatively evaluated by considering participation in *mingas*. *Mingas* are collective activities conducted for communal benefits. For the Waodani, they create a foundation for fostering inter-personal relations and obligations that go beyond the consumption economy (Rival, 1996; Holt, et al., 2004). All residents of a given community are expected to participate in a *minga* (Holt, et al., 2004) and, on some occasions, neighbors and friends from other communities join in (WCS anthropologist, pers. comm.). *Mingas* are thus an example of collective action where people organize themselves to work together on specific projects. They also provide an opportunity to spend time together; eating and drinking, and telling stories. As a result, *mingas* could strengthen social cohesion by engendering feelings of friendship and reciprocity.

In the present study, the importance of and participation in mingas were, again, especially noticeable in Kiwado:

People come to work together to cut grass for the airstrip. Mingas are important for us because we can all get together to work together for the community and our children (Participant #1.6, Kiwado).

All families participate in mingas in the community. It is good that we all work together to improve our community. It is also when we have a chance to spend time together, eat together and drink chicha. I like coming to mingas (Participant #2.5, Kiwado).

However, the proxies used to evaluate social capital as a condition for ACM are not uniformly present across the SES. In contrast to Kiwado, the findings from the focus group discussions conducted in Guiyedo and Batabudo reveal a relatively low level of social cohesion. For instance, both in Guiyedo and Batabudo, community members are not inclined to share *chicha* and other kinds of food among themselves:

Now when we work on the road, the company gives us food and we do not have to hunt a lot. Each family has its own food (Participant #1.5, Guiyedo /Timpoka).

Sometimes we share but not much. Everybody hunts for himself, and we do not share so much with others (Participant #1.2, Batabudo).

Importantly, these findings from the focus groups were further substantiated during individual interviews. For instance, the lack of social cohesion in Batabudo was confirmed by one of external actors who have had a long working relation with community members:

They do not share much food among each other. You can see that they are hunting animals but they are eating them only within their own family [...]. Maybe during their festivities [...]. These festivities represent the space where they share everything but that does not happen on every day basis in their communities [...]. Relations among the families in Batabudo are very weak. There is a lot of individualism, and you do not see a lot of thinking or acting as a whole (Oil Company Representative, #4).

Participation in mingas is also less pronounced in Guiyedo and Batabudo, especially Batabudo:

Many people do not care about the community and helping others to do things. Everybody only cares what he can get. This is bad, because it is hard for us to work together (Participant #2.4, Batabudo).

This lack of group solidarity in Guiyedo and Batabudo extends to other projects aimed at benefiting entire communities:

Some time ago, we were bringing students from the research station to the Guiyedo and Timpoka. We thought that the communities can earn some money from selling their handicrafts or organizing cultural events. After a couple of visits, internal conflicts arose because some families were getting money and some not. They could not agree on rotating or sharing the money they received from tourists. After a while

we decided not to come or initiate any other projects with them because it was only causing problems and internal conflicts (NGO Representative, #1).

There are many problems with working with Batabudo. When you start any project in the community, each family is trying to get something for themselves and they are not interested much in the benefit for the community as a whole (Government Representative, #10).

Caring for each other

The strength of horizontal linkages among community members can also be gauged from their caring for one another. In the present study, this proxy for social capital was, again, most evident in Kiwado:

We always help if someone gets sick in the community, no matter which family he is from, and where he is from. My mother often goes to the forest to pick some plants and brings them back to give them to a sick person (Participant #2.1, Kiwado).

In Kiwado, there are eight families, namely: Boyotai, Nihua, Orengo, Coba, Tocari, Enomenga, Yeti, and Tocari. However, the Waodani were, historically, highly individualistic and self-reliant people. They were antagonistic towards those with whom they did not have blood relations and unwilling to assist those who could not take care of themselves (Yost, 1981; Robarchek and Robarchek, 1992, Sections 3.3.1 and 4.3.2.1). Given this reality, prior to the study, I had expected that social capital would be relatively low in all the communities. On its own, therefore, the cultural shift in the direction of caring for one another found in Kiwado points towards adaptability and an ability to redefine some of the most basic social values governing these hunters and gatherers. This, in turn, could be beneficial to ACM because it generates a social context conducive to the collective action needed to face an uncertain future (Ostrom, 2005, Sections 2.5.2 and 5.2.2.1).

However, in terms of caring for one another in case of emergency, the differences between Kiwado, on one hand, and Guiyedo and Batabudo, on the other, again became evident:

We help each other once somebody gets sick and needs to be taken care of [...], but when someone is bitten by snake, or has an accident, we always go to Repsol. They help us when something happens in the community. They have medicine or take us to the hospital (Participant #1.5, Guiyedo /Timpoka).

We sometimes want to help others when something bad happens, but people here do not help much each other. When my dad got sick, I went to the oil company to take him to hospital. Nobody else here helped me to take him there, only the oil company helped me (Participant #1.4, Batabudo).

These views were confirmed by an external actor familiar with the context:

[...] if something happens in the community, for example, the child has broken his arm, or someone fell from a tree and has a broken leg, we do not receive the information directly from the community. We usually find out about the accident because we are in the proximity, or someone mentions it passing by. The community members don't help each other. I wish there would be more solidarity in the community (Oil Company Representative, #4).

The differences in the presence of the proxies for social capital between Kiwado, on one hand, and Guiyedo and Batabudo, on the other, reiterate the importance of an in-depth and comprehensive analysis when evaluating the conditions for ACM in the SES. Evaluating the Waodani SES solely through the prism of Kiwado or, conversely, through the prism of Guiyedo and Batabudo could result in arriving at a misleading conclusion.

Therefore, a more profound analysis of the factors underlying the disparities in social capital needs to be undertaken to provide reliable data. For instance, in the present case, it could be argued that different levels of market integration and the impact of the oil industry may explain the differences in the proxies of social capital among the studied communities. Guiyedo and Batabudo - due to their proximity to the Maxus and Auca roads, respectively - depend to a large degree on interactions with multiple external actors ranging from oil company workers and colonists to NGOs and individual researchers (see Pearson, 2010). Furthermore, as noted in Section 4.3.1.2 and emphasized by the Waodani, oil companies supply the communities with various pre-packaged goods and, as a result, *“each family has its own food”*. Differences in access to markets and in the levels of commercialization of daily life can also help to explain differences in the extent of social cohesion found in the study. The introduction of paid, primarily oil-based employment (Sections 4.2.2 and 4.3.1.2) and the ability to buy goods, instead of collecting them, obviate the need for collaboration in Guiyedo and Batabudo to a greater degree than it does in the less market dependent Kiwado.

In support of this argument, a study by Reyes-Garcia et al. (2010) conducted with the Tsimane society of foragers-farmers in the Bolivian Amazon indicates that, with increasing market integration, there is a decrease in dependence on traditional forms of social capital due to diversification in the types of social networks (e.g. researchers, NGOs) available to community members. This coincides with Holt et al.'s (2004) study which shows that food items are less commonly shared in communities which are highly dependent on external help. Similarly, a study by Putsche (2000) in the Peruvian Amazon demonstrates that access to markets reduces food sharing practices and undermines social cohesion. Furthermore, as argued by Rival (2002), with increasing access to external sources of livelihood, the demand-sharing decreases and an even greater individualism or family-centrism emerges: both of these factors undermine possibilities for generating collective action and strengthening the horizontal linkages needed for ACM.

Moreover, although both horizontal and vertical linkages are essential for ACM (Armitage et al., 2007, Sections 2.5.2 and 5.2.2.1), in the case of the Waodani from Guiyedo and Batabudo, the strengthening of the latter might contribute to undermining the former. For instance, the strengthening of ties with the external world - in this case, the oil industry - to the point of dependence (Rivas

Toledo and Lara Ponce, 2001) reduces the need to depend on one another or foster social capital, in general.

Overall, in terms of ACM, the totality of the obtained data reinforces the point that although the Waodani are formally one nation, the success of collaborative efforts can also be dependent on individual communities' location and their socio-economic context. Kiwado's residents, given this community's stronger social capital, might be more self-motivated and determined than the Waodani from Guiyedo and Batabudo to enter into ACM initiatives that aim at enhancing the socio-ecological sustainability of the SES.

7.2.2 Leadership

As argued in Sections 2.5.2 and 5.2.2.1, leaders are essential to the processes of co-management. They can help in coalescing resource users around common goals and can strengthen and facilitate the processes of learning and shared decision making that are a critical source of adaptive and operational capacity. In the context of the present study, the Waodani leadership can be divided into local and national. Local leaders are those Waodani who are selected by individual communities and who form these communities' direct or indirect link to national leaders and all external actors. National leaders (NAWE), who are selected during a general nationality assembly²⁴, represent, on the other hand, the Waodani nationality as a whole in various negotiations with NGOs, oil companies and the Ecuadorian government.

7.2.2.1 Local leaders

Passivity and ineffectiveness

Focus group participants from all three communities expressed a similar level of criticism towards and a lack of confidence in their local leadership. Their statements focused on three major deficiencies of local leaders. Firstly, leaders are blamed for not getting enough projects to the communities:

I do not see so much help from the president; he is a good president but he lacks training on how to get us projects and help the community (Participant #1.3, Guiyedo/Timpoka).

I want [a local leader] to get us things for the community, from the government and from the people on the outside. He should be talking to them trying to get something for us (Participant #1.3, Batabudo).

Secondly, they are criticized for spending more time in cities than in communities:

²⁴ On many occasions, NAWE leaders are selected in 'illegal manner during the 'regional' assemblies that are not attended by the whole nationality.

It's bad with many leaders that they are staying in the city and not spending time in their communities. We need people in the communities to decide things. (Participant #2.2, Guiyedo /Timpoka).

Thirdly, the interviewed Waodani complained about their local leaders' poor communication skills and their selfishness:

Any new information must be shared with the community. But sometimes the president is going to a meeting and comes back and says nothing and we do not know what is happening (Participant #2.5, Kiwado).

The parish only invites the president for meetings. Still, the whole community should participate in meetings with the government because the president sometimes talks only about his interests and does not talk in the name of the community[...]. When president comes back from a meeting, he does not call for any meeting with the community to share the information with us (Participant #2.6, Guiyedo /Timpoka).

Local leaders' passivity and selfishness can be linked to the governance barriers and, underlying them, the cultural barriers discussed in Section 4.3.2. Strong individualistic tendencies continue impact on the governance processes in the SES. Similarly, passivity resulting from the cultural script which favors consumption over production (Robarchek and Robarchek, 1998; Rival, 2002) and which made the Waodani susceptible to *el modelo asistencialista* remains a factor in the current management activities.

The criticism of local leaders is also evident in the transcript from interviews with external actors. Two aspects are especially troubling. Firstly, there is a lack interest on the part of local leadership to motivate others to carry on and sustain projects that have already been implemented:

There are no leaders in the communities of Guiyedo or Timpoka to continue some of the already initiated projects such as the management of river turtles. The communities should have already taken over the project, because they have learned how to organize everything and manage it. There is maybe one person who cares about the project but he does not have the characteristics of the leader, and nobody follows him [...] (NGO Representative, #1).

What is significant about this statement is that it shows that those Waodani who - from an external perspective - might be best qualified to carry on projects might not have legitimacy or skills to become community leaders. This disparity between external actors' expectations and the abilities of community leaders demonstrates the challenge inherent in bringing together two epistemologies - the traditional and more scientific - a process which is, as argued in Section 2.6.2, one of prerequisites for effective co-management in indigenous societies.

On the other hand, however, there are some signs that local leaders' incompetency or passivity is creating a motivational drive for change among ordinary members in the Waodani SES. Guiyedo's residents' complaints about their leaders' inability to "*get projects and help the community*" were

followed by positive statements describing what they would ideally expect from their leaders. This vision for the better future that incorporates common interests and “the whole community” was often expressed by Waodani women:

We need a leader who can bring projects to the community and can negotiate well with the government and the oil company here. We do not want someone who only cares about his interests, but about the whole community and how to improve our lives here (Participant #1.2, Guiyedo /Timpoka).

Importantly, not long after my interviews in Guiyedo, the residents’ views turned into action. During an assembly organized in this community, a new leader was elected. The man they chose represents the younger generation of Waodani who are more open towards collaboration and more determined to seek projects and other opportunities for communities. Whether, in reality, he will turn out to be a good leader remains to be seen. Still, Guiyedo’s residents’ action shows a willingness to experiment as well as indicates that horizontal linkages might be coalescing for a common purpose. This is especially important, since as argued in Section 1.2.1, social capital is weak in this community when it is measured through other proxies.

Furthermore, some of the external actors are also recognizing the emergence of a trend towards proactive leadership on the community level.

They are slowly beginning to realize that leadership matters, especially younger people who make connections with other people and organizations and have an access to other opportunities and resources. A good leader, this is what they need to move forward (Government Representative, #9).

Therefore, in spite of the deficiencies of the current local leadership, there exists a climate on the level of the communities that supports more active and effective local leadership. Furthermore, as demonstrated in Guiyedo, these attitudes are increasingly affecting the Waodani’s leadership decisions even in these parts of the territory that show a relatively low social cohesion.

Undermining projects already agreed upon

Interviews with external actors reveal that leaders are, on occasion, undermining projects that have been already agreed upon through negotiations with NAWA:

You might think that you have a green light to start implementing a given project because it has been already agreed with NAWA. The reality is different. Projects and people who come to the community can be thrown out, because local leaders don’t respect the agreement with NAWA. It can be difficult to run any project with the nationality because you have to agree on it centrally and locally [...] and on a local level, it can be unpredictable (NGO Representative, #1).

This issue reiterates the challenges of co-management in decentralized indigenous societies (see Section 2.6.5.2). As argued in Section 4.3.2.1, with the Waodani being a largely egalitarian and clan-

governed nationality, the legitimacy of centrally negotiated projects is always in danger. Furthermore, the cultural barriers associated with individualism and autonomy that prevented top-down instruction and control could still be impacting on governance processes. This is crucial to the topic of this study because local defiance of projects negotiated through multi-scale collaboration can unravel any future ACM initiatives. It might also prompt external actors to have doubts about investing in the unpredictable and volatile socio-cultural context, as it was the case with IBIS (Section 4.3.2.1). With ACM in the Waodani SES being highly dependent on external involvement that is prolonged and inured to challenges along the way, local leaders' intransigence can present a stumbling block.

On the other hand, however, although local leaders' occasional rejection of centrally-made decisions can undermine NAWE and even prevent sound co-management projects from being readily implemented, it can also provide a benefit in the context of ACM. As argued in Section 2.5.2, additional levels of power and control broaden the spectrum of management choices and lead to the formation of polycentric governance structures. These polycentric structures can prevent misappropriation of resources and hasty implementation of any unilateral vision (Dietz et al., 2003; Folke et al., 2005; Charles, 2007), which was, historically, the governance barrier associated with the Waodani national leadership (Section 4.3.2.1).

7.2.2.2 National leaders

Dissatisfaction with NAWE leaders

Similar to local leaders, NAWE leaders are criticized for their selfishness and for their disregard of communities and their needs:

Last time, we had a meeting planned in Arajuno about the distribution of radios for Pastaza communities and we had to leave early in the morning to get there. I told NAWE technicians to pick me up in the morning from my house so we can all go together. I was waiting and waiting, and then they called me when they were in Coca. (Participant #2.6, Kiwado).

NAWE had \$800.000 and they spent \$300.000 and where is the rest of the money? We do not trust NAWE that they would help us, they are spending money only for their private things (Participant #1.2, Guiyedo /Timpoka).

In regards to their statutory obligations, NAWE leaders are accused of passivity in obtaining funds from outsiders and of failing to defend the territory:

NAWE does not help much, they only wait till the oil companies help and give them more money. They do not search for any funds and don't bring any projects to the communities (Participant #1.2, Batabudo).

NAWE does not protect our territory. They should help us with projects and help with Kichwa who enter the territory from the Curaray River to hunt and contaminate our rivers with barbasco. They do not do anything for us (Participant #2.5, Kiwado). Pedro and NAWE talk beautifully and mark activities on a blackboard in Puyo, but

they never come to the community and they never care much about any projects for the community. They only come for festivities or for sport activities and then they say that they had a meeting with the community to organize a project (Participant #2.3, Kiwado).

As in the case of local leaders, it is thus likely that the governance barriers underpinned by the Waodani's cultural script (Section 4.3.2.1) continue to influence NAWÉ leaders' action and inaction.

Even some of the previous NAWÉ members admit that there are serious problems with how the organization has been run from its early stages:

We still have no vision where we want to go. The problem is that with each new president things are just getting worse and again the new president does not help us to correct past mistakes. We have been in it for so many years and this is still not changing; now there are opportunities but we do not understand them well or how to take advantage of them for our nationality (Waodani Leader, #5).

All these complaints indicate a sense of hopelessness and disillusion on the part of the Waodani in regards to their national leadership. There is an understanding that things have to change but also a feeling of futility about accomplishing this change. Furthermore, NAWÉ's shortcomings relate directly to the possibility for ACM because they could indicate a lack of iterative learning and reflexivity (Berkes et. al., 2003; Folke et al., 2005; Djalante et al., 2011; Section 2.4.1).

Many external actors participating in the study were also critical of NAWÉ:

[NAWÉ] should also think about the whole nationality, but they don't think about all the communities. In a large part, there are still a lot of individual interests. This is why many communities do not want to have anything to do with NAWÉ leaders; they always want to throw them out or bypass them to get a direct access to the resources. There is no trust in the organization. Still, for us, this is a big problem because we need to have a central governing body to negotiate with and for accountability purposes as well (Government Representative # 15).

In essence, a troubling context emerges. NAWÉ leaders' incompetency and selfishness undermine their legitimacy on a community level. Legitimacy, as argued in Section 2.6.3, is, however, a prerequisite for an effective collaboration in indigenous societies, and could be even more important in the case of highly egalitarian and individualistic nationalities, such as the Waodani. Furthermore, external actors - due to their logistical limitations and their externally-defined mandates - need a central leadership body that would speak with authority for the whole Waodani nationality. Therefore, for co-management processes to succeed, a strong linkage between individual Waodani and their national leaders is critical. In essence, therefore, leadership links back to the issue of social capital - both vertical and horizontal - as a prerequisite for implementing ACM in the Waodani SES.

Once again, the seemingly intractable problem of having a centralized leadership in the clan-governed society manifests itself (Section 4.3.2.1). The problem comes from both sides. On one hand, NAWÉ leaders' individualism and clan mentality reveal that they do not think about the welfare of their communities. On the other hand, communities' suspiciousness of and dissatisfaction with NAWÉ might prompt NAWÉ leaders to rapidly search for personal benefits before they are removed from power. In essence, the selfishness of NAWÉ leaders partly stems from the precariousness of their positions in the egalitarian and individualistic society, and from the overall volatility of the Waodani politics (Section 4.3.2.1). Altogether, therefore, an initial evaluation of NAWÉ leadership in the SES shows that "existing and evolving power relationships among different groups" operating in the system do not appear conducive to fostering adaptive capacity for resilient management (Berkes, 2007: 289).

Indeed, the clash between the Waodani's expectations and the reality of NAWÉ leadership might feed cynicism and a sense of futility as to the SES's readiness for ACM. However, this clash, as in the case of local leadership, could also become a motivational drive for change and could lead to having a more representative national leadership in the future. Some of the collected statements point to searching for change:

NAWÉ should participate and plan how much money goes for the nationality and projects. Yes, it would be important to have monthly plan so they can advise communities about new projects. It is easier for NAWÉ leaders to deal with the government to get projects, because for the people from communities it is hard to leave for meetings and it is very expensive, too. Often, they have to go to the city by plane, and they don't have money to do it. There should be some possibility that presidents or representatives of communities, maybe every 3 months, go to NAWÉ and plan activities together and what they intend to accomplish (Participant #2.6, Kiwado).

NAWÉ should negotiate with parishes or provincial government and they should give them a plan of what they want to do in the future in the territory. This way we all can have projects and NAWÉ can manage them with local governments. This is how other nationalities have developed things (Participant #1.2, Guiyedo /Timpoka).

The second statement was supported by other community members during the focus groups, which demonstrates a potentially broad support for the concept of national leadership; provided that this leadership becomes more responsive to communities' real needs. Furthermore, the participants' views expressed here coincide with the premises of ACM. A long-term vision, concern for efficient sharing and transmission of information, and favoring multi-scale projects with external actors are qualities that could help in adaptive co-managing of the SES (Plummer et al., 2012). Therefore, looking into the future, it could be hoped that the wishes of the Waodani might eventually reach a critical point at which they will begin to affect, in a positive and tangible way, legitimacy, accountability, and effectiveness of NAWÉ leadership. Moreover, the very search for new solutions points to

management experimentation, reflexivity, and learning from mistakes that are essential for strengthening adaptive capacity and transitioning towards adaptive governance (Armitage et al., 2007, Section 2.2.4.2).

Experimenting with the concept of a national leadership

Importantly, there are also some signs that the Waodani's wishes are finally having a real impact on national governance processes. For instance, there is a growing recognition among the Waodani of a need to implement changes to the processes through which NAWE presidents are being elected:

Each Waodani's association and provincial organization should have a candidate for the NAWE president and a proposal to present it during the Assembly to compete for the NAWE president's position. Within the NAWE's governing council there should be representatives from all the three provinces and not only those from the extended family of the president. This can't go on anymore. There are young people who are trained and with university degrees and now we can do better things for the nationality (Participant #1.7, Batabudo).

It is thus evident that the Waodani are proposing practical steps and solutions in their search for new ways to govern their territory. Redefining the leadership structure of NAWE is one of the challenges they are willing to undertake. Another concrete example of this tentative process was the election of NAWE president in March 2012. Despite previous attempts to overthrow and replace Pedro Enqueiri in ways contrary to the statutes, the overall sense among Waodani was that they did not want their presidents to be elected in an illegal way, as it had often been the case (section 4.3.2.1). As a result, an attempt to by-pass democratic and legal procedures was prevented and, in March 2012, three candidates were proposed for the position of the NAWE president during an assembly. These were young people with university education, strong Spanish language skills, and close linkages to communities (Fernando Nihua, Gilberto Nenquimo, and Cawetipe Yeti). These recent developments and the overall attitudes of the Waodani people to the very concept of national leadership suggest that the current problems with NAWE might be mitigated with the emergence of more capable leaders and with an ongoing external support.

Finally, one more manifestation of the Waodani's experimentation with the concept of leadership has been taking place. In the recent years, a number of provincial Waodani organizations have been formed (Section 4.3.2.1), and their members are vocal about managing their affairs apart from NAWE. The Waodani Organization of Orellana (ONWO), with its office in the city of Coca, is an example of such a local authority. One of its leaders participated in the present study:

Over the past 30 years, NAWE did not do anything for the nationality [...] and look where we are now. The idea is that we as ONWO will be coordinating things in Orellana. I have a group of 5 technicians that are trained by SENPLADES in the project proposal writing in the required by the government proposal formats. We need to take advantage of the opportunities that are in front of us now (Waodani Leader, #8).

For some external actors, however, these decentralizing developments constitute a problem:

NAWE does not seem to have the political power and this is why a number of local and regional organizations are formed. They are formed, however, because there is someone from outside that is interested in having access to the indigenous group on a local level. Altogether, a lack of satisfaction with their own organization and then the vision of potential benefits promised by people from outside lead to a break-up of an internal organizational structure that, in turn, only weakens the nationality as a whole and its negotiating power. The Waodani should have one central governing body rather than scattered associations (NGO Representative, #11).

Certainly, these views are not to be discounted, especially in the context of the Waodani's already discussed individualism and the lack of strong social capital in some parts of the territory (see Sections 4.3.2.1 and 7.2.1). As argued by Shackleton and Campbell (2001), decentralization could prevent to sustainable management if there is lack of commonality of beliefs and interests at the community level. Still, on the positive side, it needs to be recognized that the Waodani consider the decentralization processes an important step towards better adaptations for challenges facing their SES. Rather than the repudiation of NAWE altogether, the decentralization processes are seen as complementary to the central leadership structure:

We want to change the way we are governing ourselves and our territory. Listening to our communities is very important and we have to have organizations that are more connected to the communities. We have copied the western style of living and governing. This is good because it helps us to work with others, but sometimes this is not working for us as a nationality. We adopted things because we did not do anything else and it was an easy way. Now we see that this is not working and we have to look back at our culture and who we are. Local representations might be the way for us to adapt to our way of governing that has been always more local. We need these local associations like ONWO that work closer with the communities and can resolve local conflicts NAWE cannot because it is far away. Still, we need NAWE to maintain our links with the outside world (Waodani Leader, #1).

Shortly after this interview, in September, 2012, the seventh²⁵ organization - the Council of Waodani Nationality of Pastaza (CNWP) - was created by the former NAWE president, Pedro Enqueri, with a goal to plan and coordinate projects in the Pastaza Province. The creation of this organization was met with overall acceptance among the Waodani, which shows grass-root support for the idea of decentralization as a supplementary governance concept.

A statement obtained from one of the Waodani leaders sheds more light on how the process of decentralization is being envisioned:

We can have our own local governing bodies in each province because we have a big territory and this helps us to manage and work with other local institutions and communities. Still, we all should respond to NAWE that has its responsibilities in the

²⁵ Currently recognized organizations are: NAWE, AMWAE, Orellana (ONWO), Napo (ONWAN), Pastaza (CNWP), Association of Kewediono and Association of Bamenó

area of administration, territorial management and protection. NAWE can receive funds from the State and then transfer resources towards its representative organizations in each province. This is the strategy to improve how we govern ourselves (Waadani Leader, #6).

Importantly, the idea expressed in this statement is already taking shape. At the beginning of 2013, when I was in Puyo, I participated in a meeting between leaders of NAWE, ONWO, and the recently created CNWP. The leaders said that it was their intention to work together to improve the lives of the Waodani people. I also talked privately to Cawetipe Yeti, the NAWE president, and he said that it was important to have local representatives collaborating in governance processes because this would make managing the territory easier.

Consequently, in the context of ACM, the formation of decentralized units of power - in addition to NAWE as a national-level governance body - does not have to be an obstacle to co-management efforts between the Waodani and external actors. Although, on the surface and in the eyes of some external actors, the creation of the provincial organizations might be seen as a development that could spell doom for NAWE, it does not need to be so. What might happen, instead, is the formation of a tentative compromise between the Waodani's cultural need for acknowledging egalitarianism (Section 4.3.2.1) and external actors' need for central governance bodies. Furthermore, decentralization may lead to the solidification of linkages between 'the true community base' and the outside world that could be more suitable for managing problems at the multi-scale level. In essence, having local governing bodies that assist or complement NAWE as an additional level of power and control could promote the plurality of views and solutions through the formation of polycentric governance structures (Section 2.5.2).

Finally, in the context of ACM, experimenting with governance models might be seen as an indication of a process of reflection and learning from past mistakes (Sections 2.2.4.2 and 2.5.2). Of course, the ways of searching for governing models proposed so far might not be ideal or the most conducive to ensuring long-term sustainability of the SES. They point, however, to readiness for testing management options, which could eventually lead to the implementation of truly adaptive governance in the SES.

7.3 DISCUSSION OF FINDINGS RELATED TO MOTIVATION-BASED CONDITIONS

7.3.1 Importance of the Resource

In the present study, the importance of the resource to Waodani community members was assessed by analysing the importance of the forest and animals, importance of the territory, and preference for living in the forest versus the city.

Attachment to the forest

As Ziegler-Otero (2004: 145) says, for the Waodani, the territory is a “multi-layered system of rights and responsibilities-hunting, usufruct rights, residential rights”. This is what defines the Waodani on a cultural level and links them together. The territory is a priority in their efforts (Lu and With, 2010) and negotiations; the one concern that is common to all of them . As one of the external actors says:

When, for the first time, we went to talk to NAWA, they said “we want boundary demarcations, we want training, [...]”. They were very clear what they wanted and needed. The territory is something that has always been an important issue and every president we worked with wanted to consolidate the Waodani territory (NGO Representative, #7).

From this perspective, the territory impacts on two different categories relevant to the present study. Firstly, it reinforces the importance of the resource as a condition for ACM, since it still constitutes the physical space where the Waodani live, hunt, fish, and gather fruits. The forest has for the Waodani a tangible value that goes beyond its visual and spiritual attributes (Rival, 2002). In this sense, the Waodani’s vision of the forest strongly contrasts with some conservationists’ image of the forest as pure wilderness that should be left alone and not exploited by humans (Redford, 1991; Richards, 1997; Terborgh, 2000; Bremner and Lu, 2006). Furthermore, the territory relates to social capital that determines horizontal linkages among community members:

I worry about our territory and care about it. This is the place, our ancestors, they lived here and protected it from everybody and now we are protecting it. We are going to sleep and getting up thinking about it (Waodani Leader, #2).

We keep going back to our forest no matter where we are. We all keep it in our heart and thoughts. The territory is who we are and it brings us all together (Waodani Leader, #10).

In some ways, the forest, in its overall importance, transcends its physical dimensions and becomes an almost mystical notion that infuses these indigenous people with a sense of cultural identity:

This is where we came from and this is where our children and grandchildren will be born. This is what our grandfathers defended so we have animals to eat and where there are roots of trees that feed us. This is where we can negotiate with others and let others get to know our resources and learn about our traditions. Without the territory we are nobody and we have nothing (Waodani Leader, #11).

Importantly, this last statement, as well as the one above it, was made by Waodani women who are members of AMWAE, which reinforces the argument that Waodani women – due to their concern for children and their future (Section 6.3.1) – are especially preoccupied with the long-term sustainability of the SES.

Interviews with the external actors confirm the multi-faceted importance of the territory:

For them territory is something they have inherited from their ancestors and something that they want to leave for their children. It is a unifying concept in a sense

that all political dealings and the basis for all negotiations with other organizations are about protecting the territory [...]. NAWÉ and others might have many issues and problems, but protecting the territory is number one (Specialist, # 6).

In light of these statements, it is not surprising that the concern for the territory was the main motivational factor for the creation of the Waodani's first central leadership organization, ONHAE. As discussed in Section 3.2.2.2, ONHAE was formed in response to the oil companies' encroachment on the Waodani territory, and territorial titling and demarcation were priorities for this predecessor of NAWÉ. Ever since, territorial rights have continued to play a major role in the Waodani's interactions with the external world as demonstrated through the Waodani's active involvement in the demarcation of their territory (WCS, 2012b).

In the present study, for Kiwado residents, the forest is, indeed, far superior to the city as a place to live:

Coca is not so good because there is a lot of noise and it is very hot. I like to sleep by the river and listen to animals in the forest. I miss the forest when I am in Coca. (Participant #1.5, Kiwado).

I lived for seven years in Puyo studying and I did not like food there. I like food here from the forest like chicha, fish, and peccary. They have different taste and smell. I do not like living in the city (Participant #2.4, Kiwado).

Furthermore, in Kiwado, especially, the importance of the forest was also strongly related to the vital role of natural resources in ensuring the Waodani's livelihood:

When we are hungry, we go to the forest to hunt, pick up fruits or go to the river to fish. The forest gives us everything we need to survive. This is how our grandfathers lived [...], they lived from the forest and what it gave them, and this is how we want to live (Participant #1.4, Kiwado).

Forest is where we collect fruits, animals, fish, this is where we hunt. This is where we live free and our families can eat and get what they need and they do not need money for this. Because if we go to the city, we have to buy everything and everything costs us money. Forest is our city, and it gives us things and we don't have to pay for them. This is why we need forest to be free (Participant #2.2, Kiwado).

Moreover, whether it is the Socio Bosque program described in Section 4.4.2, the production of traditional handicrafts for sale, or an interest in the development of ecotourism, the forest is seen in Kiwado as a provider of economic alternatives that can aid local livelihood strategies:

We need to have money to support our children and send them to school so they can get education. I make handbags, hammocks from the chambira palm, and I take them to the AMWAE's store in Puyo. It is important that we always have the chambira palm, because if we destroy it we no longer can produce handicrafts to sell (Participant #1.6).

We want to protect our forest so we can have many animals here for tourists to see. We also want turtles in our river, so we can take tourists to the beach and they can see turtles. It is important for us (Participant #2.3, Kiwado).

Indeed, the conservation of the forest and its resources has already provided the Waodani communities with direct financial benefits. Socio Bosque itself provides four Waodani communities with an annual income of \$115, 200, with Kiwado being the first one to join the program (see Section 4.4.2).

In Guiyedo and Batabudo, the forest is also important, but it was usually referred to in terms of its cultural value. Kiwado residents' views such as “*we need our forest because it feeds us*” or “*when we are hungry we go to the forest*” were rarely expressed by participants from Guiyedo and Batabudo who focused, instead, on the forest as a place that defines their identity.

We want to listen to animals and birds that sing in the morning. We have big trees we have to protect because there are monkeys and birds living there. This is our place (Participant #1.4, Guiyedo /Timpoka).

It is important for us to live in the forest, wake up to the sound of the birds and animals (Participant #1.1, Batabudo).

It is better to have education here, bring good professors, here, to the community. I would like to stay in the community. Yes, some people want to go to the city but they always come back and want to spend time here, in the forest, in the community because this is where they are free and this is where they are the Waodani (Participant #1.3, Guiyedo /Timpoka).

As already explained in relation to social capital (Section 7.2.1), these two communities' greater linkages to the markets and external economic opportunities lessen their daily dependence on forest resources. This is understandable, given the Waodani's notion of the forever-giving forest - which now also encompasses new sources of ‘*abundancia*’ such markets and external opportunities - and their belief that ‘the world exists for humans to exploit’ (Section 4.4.2.1). Still, these factors do not preclude the persistence of cultural and emotional attachment to the forest. Overall, in the context of ACM, the Waodani's genuine concern for their territory emerges as a positive factor. Their preoccupation with their land and their spiritual connection to it could create a powerful motivational drive to enter into ACM efforts. It could mobilize communities towards collective action and institutional reorganization aimed at ensuring resource sustainability.

7.3.2 Perception of the resource problem

Although the importance of the resource is a necessary first step in generating people's motivational readiness for collective action geared towards resource management, it is not always sufficient to bring about this action. A given community might still remain passive if the importance of the resource is not accompanied by the perception of its scarcity (Gibson et al. 2007, Section 5.2.2.1). In

the present study, the data related to ‘perception of the problem’ were gathered in relation to animal scarcity and the impacts of oil exploration and exploitation. There were a number of reasons for choosing these factors. Firstly, despite their increasing linkages to the market economy, the Waodani remain highly dependent on forest fauna. According to the study by Lu and Sorensen (2013) conducted in the communities of Kewediono and Gadenio, in 49 percent of the days of the study, the Waodani were involved in obtaining food from the forest. As Lu (2010: 8) writes, “hunted game and fish are the main sources of valued protein” for the Waodani. Hunting rather than agriculture or other forms of sustenance was and is, central to the Waodani culture and their sense of identity (Rival 2002). Indeed, the data show that they are more reliant on wildlife than any other indigenous group in the Ecuadorian Amazon, and their dietary patterns are most reflective of a subsistence orientation (Lu, 2007). Furthermore, being able to hunt and live off the forest is what they wish for their children (Holt et al., 2004).

Oil exploration remains, on the other hand, the main threat to the ecological well-being of the Waodani SES. It is also the reality that increasingly affects all aspects of the Waodani life. As it is argued in Section 3.3.2.2, 4.2.1, and 4.2.2, its impact on the ecology, health, and socio-economic well-being of the Waodani has been profound.

7.3.2.1 Animal scarcity

Expressed awareness of the problem

Overall, the data again point to some similarities as well as important differences between Kiwado, on one hand, and Guiyedo and Batabudo, on the other. Firstly, participants from Kiwado do not perceive any major problems with animal scarcity within their communities:

Over here, you see a lot of animals in the forest (Participant #2.2, Kiwado).

We have many animals in the forest, we do not have to walk far to hunt and many animals come close to the community (Participant #1.4, Kiwado).

Unfortunately, it is difficult to juxtapose Kiwado residents’ views with quantitative field-based data. There is still a lack of long-term studies that would substantiate or contradict these views, so it is possible that animal scarcity has, indeed, become less pronounced in the community.

Furthermore, many of the same participants from Kiwado recognize that there were issues related to low animal abundance in the past:

There are many animals here and we have no problems with animals now. But we did not have so many animals before because there were many families living here in Kiwado and they hunted a lot. Now we do not have so many families and we do not need to hunt so much (Participant #2.3, Kiwado).

It was worse before...It was difficult to see many animals. I had to spend more time walking through the forest to hunt them (Participant #1.4, Kiwado)

Participants from Kiwado also recognize problems with the animal density in other parts of the Waodani territory:

Along the Maxus Road, there is a lot of hunting. Before the road was built, there were many animals and people only hunted animals with spears to eat. Now they hunt with guns and they also hunt to sell animals on the market to buy alcohol. Sometimes you see many animals killed and thrown away, because they do not eat them but just hunt them to sell. They hunt too much and don't think about the future [...]. They will hunt down all the animals, and there will be no animals there in the future. They will have to buy all their food on the market, but this will no longer be the Waodani's way of living. It's a bad. We don't want this in our community and we have to manage our territory better (Participant #2.4, Kiwado).

All these statements indicate that, in the case of Kiwado, the issue of animal scarcity requires a multi-faceted analysis. On one hand, Kiwado residents' claim that there are no problems with animal abundance might suggest a lack of awareness or even a disregard of the problem. On the other hand, however, some of the same residents say that there was a problem with animal abundance in the past, which would suggest that they are paying close attention to changes in faunal scarcity and to differences in hunting yields. Furthermore, their recognition of the problem in other Waodani communities indicates an ability to detect variations in animal abundance, in general.

Altogether, therefore, the Waodani from Kiwado appear to look at the problem of animal scarcity in comparative rather than in absolute terms. In their eyes, the current situation is better than their past experiences and, as a result, the concern for animal abundance is not readily evident. This line of reasoning reinforces the Holt's (2005) view that the awareness of ecological problems emerges only when communities perceive the state of their natural environment as becoming significantly worse than it was before. In other words, a recent and persistent decrease in animal abundance is more critical to the perception of the problem than the absolute number of animals in any given time.

Participants from Guiyedo and Batabudo, similar to Kiwado, also do not see any major problems with the current abundance of fauna and with their own hunting activities:

Now, I see more animals than before. They are coming here to the community, and we can see them around (Participant #1.4, Guiyedo /Timpoka).

Yes, you can see many animals here. We never had any problems with animals and we find them everywhere because people don't hunt so much here (Participant #1.6, Batabudo).

However, in contrast to Kiwado, substantial and lengthy research has been done in Guiyedo (Suarez et al., 2009, 2012; Section 4.2.1.1). The research data show that the annual quantity of bushmeat sold in Pompeya is in excess of 12 tons. In 2011 alone, it was estimated to reach 19 tons, an equivalent to removing all wildlife from an area of 40 ha of the forest. Since 2005, when monitoring commenced in

the Pompeya market, the number of species traded has fallen from 24 (including large primates, tapirs and cracids) to 6 species of mammals, including the collared peccary (*Pecari tajacu*) and White-lipped peccary (*Tayassu tajacu*) (WCS, 2011; Suárez et al., 2012). This shift in the wildlife species composition is due, however, not to the change in the market demand but to the changes in the forest supply. The species which are most vulnerable to hunting, such as tapirs and cracids, have been extirpated from the extraction areas (WCS, 2011).

The results of the research contradict, however, the participants' views about animal scarcity in their territories. For instance, Guiyedo's satisfaction with the animal abundance does not find support in the results of rigorous monitoring undertaken by biologists from WCS. The statement that '*we do not have many problems with animals*' contradicts a long-term study conducted by Suarez et al. (2009, 2012) that showed the disappearance of major mammal species along the Maxus road, where the community is located. Of course, the scientific studies presented here were done using quantitative methodology that reflects Western values and thus differs significantly from the traditional ways of gathering knowledge. As argued in Section 2.6.2, the differences between various epistemologies need to be acknowledged in evaluating co-management, and thus the Western scientific approach need not be automatically given preference over the indigenous one.

In the case of Batabudo- even though no thorough wildlife monitoring research has been carried out so far - there is also a high plausibility that a serious problem with fauna exists. The Waodani's claims of decreasing hunting activities clash with the first person accounts of people who are familiar with the community:

We often see the Waodani from Batabudo and Tigüino taking animals to the market in Coca. They have a deal with one of the bus companies and they transport many animals to Coca to sell. There is a lot of hunting in the area, even though they do not admit it (Government Representative, #10).

Furthermore, again contrary to Kiwado, even when some residents of Guiyedo or Batabudo appeared ready to acknowledge the problem of animal scarcity, they were still not ready to accept any responsibility for it. Instead, they put the blame squarely on external factors:

Before, we had many animals in the area, but when the oil companies came they polluted our waters and now there is a lot of noise. Animals escape and we can't find them. We do not hunt much but it is difficult to find animals here because of the oil companies [...] It is not like before, when animals were everywhere (Participant #2.6, Batabudo).

It's all because of oil companies scaring animals away. If it weren't for them, we would not have any problems because animals are there in the forest (Participant #2.5, Timpoka/Guiyedo).

Overall, it appears that in Guiyedo and Batabudo the awareness of the problem of faunal scarcity remains relatively low, and residents' views are more in line with the Waodani people's traditional notion of *abundancia* or 'forever-giving forest' (Section 4.3.4.2). Furthermore, in those cases when the awareness of the scarcity does exist on the part of the participants from Guiyedo and Batabudo, the blame is placed on others, in contrast to Kiwado. These attitudes confirm Holt's (2005: 208) findings that for many Waodani "the threat to the environment is external, not internal" and it comes only from road building, logging and oil companies that "drive animals away".

Involvement in conservation action

As argued above, in the case of Kiwado, there is a lack of long-term studies evaluating animal abundance, and it is thus possible that the number of animals has increased in some areas of the community to relatively satisfactory levels. If so, it means that this may have happened as the result of prior conscious conservation efforts undertaken by Kiwado residents. In essence, the current satisfaction with the number of animals might be a direct consequence of a previously undertaken collective action to modify hunting behavior in order to allow some species to recuperate. Specifically, the past concerns about the disappearance of woolly monkeys prompted Kiwado residents to stop hunting them (Kiwado community member, pers. comm.). Therefore, nowadays, one can see families of woolly monkeys near the community being fed plantains by children and the elderly. In other words, it is likely that the perception of the problem led to the species recovery, which, in turn, might be responsible for the alleviation of Kiwado residents' present concerns about animal scarcity.

Similarly, when faced with a severe crisis in river turtle availability due to excessive collection of turtle eggs, residents of Kiwado made an effort to repopulate their local river with the species by bringing 50 turtles from the Timpoka community located in the YNP. One of the community members addressed the turtle conservation efforts in the focus group:

We want to have turtles back in our communities. We want to see them on the beaches as we used to and we do not want to hunt them as much as we did before (Participant #2.3, Kiwado).

In this case, the importance of the resource for this community coupled with the perception of a severe crisis prompted Kiwado residents towards engaging in collective action. Moreover, it is important to emphasize that the collective action was independently generated by community members themselves without any externally-driven awareness raising efforts.

On the other hand, in the case of Guiyedo and Batabudo, no conservation measures arose from the community itself, even though a number of conservation projects have been implemented and the communities participated in them. For instance, the WCS river turtle conservation project to promote

recuperation of the species within the nearby rivers was externally driven. Similarly, Fundacion Natura and the oil company, Repsol-YPF, have been promoting handicrafts production, cacao farming and native fish projects as economic and livelihood options to reduce Guiyedo's pressure on the local biodiversity (pers. obs.). Still, even though these projects represent important conservation initiatives and entail the participation of the community's residents, they do not represent independently-generated collective action, as it was the case in Kiwado, and thus are less likely to demonstrate a genuine concern about the resource problems.

One of the external actors addressed Guiyedo's and Timpoka's passivity and their lack of ecological concerns:

[Guiyedo and Timpoka communities] should have already taken over the project, because they have learned how to organize things and manage them. There is maybe one person who cares about the project [...] I think that still a lot is missing. They do not respect the idea of conservation, they hunt continuously, and all the Waodani do it. I am not sure what is missing but there is no consciousness of conservation here. Well, they hunt to sell and then they buy things. But, at the same time, they do not seem to be conscious of the fact that fauna and flora are already disappearing and that the consequences of this in the long-term will be disastrous (NGO Representative, #1).

Quotes like this one need to be analyzed with caution since they might be reflective, to a degree, of individual experiences of some external actors. Still, in conjunction with other sources of data presented earlier, they point to the challenges facing Guiyedo and Timpoka. Indeed, there is a clear danger inherent in the lack of independently-generated concerns for resource sustainability. An insufficient perception of the problem means that once any mobilizing external assistance retreats, the communities might abandon conservation-oriented projects. Not having an awareness of the problem on their own, the Waodani from Guiyedo and Batabudo might revert into tapping into the 'forever-giving forest' or 'natural plenty' until the 'empty forest' remains, as it is already the case in some part of the Waodani territories (Kane, 1995; Suarez et al., 2009). Since the cultural belief in *abundancia* or the forever-giving forest (Section 4.3.2.1) can co-exist with the cultural and spiritual attachment to the forest (Section 7.3.1), the importance of the forest for cultural or spiritual reasons does not necessarily translate into motivation for collective action, especially if it is not accompanied by an intrinsically-generated perception of an ecological crisis and accepting a partial responsibility for this crisis.

In this context, it is crucial to analyze the differences between Kiwado and Guiyedo and Batabudo in terms of the perception of the resource problem in light of these communities' different type of attachment to the territory. As already discussed earlier, although the forest is important to all the three communities, it is important to them for different reasons. In Kiwado, the forest remains the main source of daily livelihood. The community's residents are still strongly dependent on it for their nourishment and other subsistence needs. Consequently, they have an incentive to be knowledgeable

about the forest resources and be perceptive to any fluctuations in animal abundance, because, once the forest resources run out, they cannot count on having an unlimited access to the market-oriented opportunities of securing their livelihood. Furthermore, they need to assume a greater responsibility for their own actions and look back at their mistakes, as Kiwado's residents do, because their very livelihood is at stake. On the other hand, in Guiyedo and Batabudo - given these communities' stronger dependence on external good and economic opportunities (Section 7.2.1) - the forest is mostly valued for its linkage to the ancestral past. Since the residents of Guiyedo and Batabudo can depend, to a larger degree, on goods purchased on the market for meeting their livelihood needs, they need not to be as concerned with the depletion of wildlife and their own contribution to it.

Of course, the Waodani from Guiyedo and Batabudo supplement their livelihood by purchasing things with money obtained from selling animals in the market. Still, even if this option disappears due to over-hunting or deforestation, they can continue to count on the externally-generated goods and services that are already available to them. Therefore, with natural resources no longer being absolutely indispensable to meeting these communities' daily needs, concerns over their scarcity diminishes. This argumentation finds support in Godoy et al.'s (2005) findings that the intensification of market opportunities in previously purely traditional societies is partly responsible for natural resource degradation.

7.3.2.2 Oil contamination

In contrast to animal abundance, the participants' concerns about and attitudes towards problems related to oil exploration were similar, regardless of a given community's location.

Expressed awareness of the problem

A large number of the interviewed Waodani disapprove of oil exploration in their territories and clearly see problems inherent in the exploitive economy:

Oil companies are destroying our territory [...]so much construction, noise, pollution [...] and it's no good for our people, too (Participant #2.5, Batabudo).

We don't like the oil exploration here, we want to protect the forest. When oil companies leave, they leave our rivers contaminated, trees destroyed [...]and we do not want that (Participant #1.6, Kiwado).

Oil exploration breaks up communities. People are different, and they care for different things [...] and animals, they get scared and the water is contaminated (Participant #2.1, Guiyedo /Timpoka).

These statements are consistent with the study conducted by Lu and Wirth (2011) which found that the majority of the Waodani were opposed to petroleum extraction in their territories.

The younger generation of the Waodani is especially determined to take measures to ensure a better control of the oil industry. Since oil exploration cannot be openly defied due to its support guaranteed by the State's ownership of the subsurface (Asamblea, 2008: Art. 1), they try to make it less damaging:

We have many Waodani who can work with oil companies and monitor their activities. We can see how [oil companies] work in the field and whether they don't contaminate our territory. This is our territory, our community and we have the right to protect it. We do not want to have it damaged like in other areas (Participant #2.3, Kiwado).

I also noticed the young Waodani's concerns for averting oil-related degradation. For instance, NAWE technicians and other young community members from different parts of the territory were eager to sign up for a six-month course in GIS and territorial management that had been proposed by Universidad de San Francisco. During a meeting in March 2013 with instructors of the Universidad de San Francisco and members of WCS - at which I was present - the Waodani said that they wanted to enroll in the course. They wished to obtain an official technical certification which would be respected by the oil companies and which would allow them to monitor these companies' activities and prevent mistakes that had been done in the past. The desire to avoid past mistakes suggests a growing readiness on the part of the Waodani, especially the younger ones, for iterative or adaptive learning.

Addressing the problem in the face of the economic reality

However, despite the Waodani's expressed concern about the effects of oil exploration, the shortage of economic opportunities in the communities makes the oil industry one of few providers of goods and services (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001, Section 4.3.2.1). Therefore, there is a feeling among a number of the Waodani participating in the study that oil exploration - even if damaging and closely associated with a centralized management approach - is of an overall benefit, given the bleak economic picture in the territories:

The oil exploration is good for us because we can have more projects and collaborate with oil companies to get jobs (Participant #1.3, Batabudo).

We wouldn't need oil companies if there were other ways for us to make money to have income for families, or have some projects, from outside, to give us[...] but there is not much going on and oil companies give us jobs, professors and medicine (Participant #2.4, Kiwado).

I often heard the same sentiments being expressed during meetings between oil companies and communities' representatives. The Waodani appear to understand damage that oil exploration causes, but they accept it, reluctantly, or refuse to acknowledge it because they do not see any alternatives for escaping their poverty. They would often say during these meetings that they do not want oil companies in their territories from the ecological and social standpoint, but these companies are the

only source of employment that they desperately need to support their families. Some of the external actors are also aware of the Waodani's ambivalent and torn attitude towards oil exploration:

They oppose the oil companies, and go to Quito, walk on the streets, and protest. Yet, you have to ask yourself how much of this is a real opposition to oil exploration, and how much of this is a way to negotiate a better deal (Government Representative, #10).

If you have oil, you have marches against oil development, and letters opposing it are sent all the way to the formal political level. Still, the same Waodani who are signing declarations against oil exploration in their territories are also signing the agreements with the oil companies. The reason that it continues is that it works. They are getting money; they are getting what they want (NGO Representative, #7).

Unfortunately, therefore, the lack of socio-economic opportunities discussed in Section 4.2.2 lessens the urgency of the problems associated with the oil industry in the eyes of some of the Waodani. This harsh reality and the fact that oil exploration will continue in the communities - given the economic policies in Ecuador (La Hora, 2013) - contribute to the Waodani's seemingly inconsistent attitudes to the problems of oil exploration. In reality, however, these attitudes appear inconsistent only when looked at from the external perspective which might view concerns for ecological well-being and support for oil exploration as incompatible notions. From the Waodani's perspective, however, these two notions are intertwined in a complex dynamics that eschews easy categorization. The Waodani might be simply resigned to the stark reality, and while their concerns for the damage brought about by the industry are frequently expressed and are genuine, they are sometimes toned down or brushed away in a desperate fight for daily survival:

Yes, we know that the oil exploration is causing many problems in our nationality but we may control it now. We need oil [...] it gives us jobs we need to support our families, and send our children to school (Participant #1.6, Guiyedo /Timpoka).

Overall, the context presented here relates to two challenges of promoting ACM in indigenous territories. Firstly, the challenge of meeting daily or more immediate needs can render the implementation of any lengthy and innovative co-management options difficult (Wilk, 1996; Section 2.6.9). The inclusion of the Waodani into a modern world which requires money and other things that were unknown in earlier times redefines the relationship that these indigenous people have with their ancestral forest. Communities' short-term concerns can outweigh and trump long-term benefits that increasing adaptive capacity through the processes of ACM could offer.

7.4 DISCUSSION OF FINDINGS RELATED TO THE ACTION-RELATED CONDITIONS

7.4.1 Openness for alternative livelihoods

The analysis of openness to alternatives or the perception of the need to change as a condition for ACM appears closely related to the perception of the resource problem discussed earlier. The

perception of animal scarcity could motivate people to try new approaches aimed at enhancing the sustainability of the resource on which these people depend (Holt, 2005). At the same time, in the case of the Waodani SES, the damage caused by oil exploration and the unsustainability of the current economic model might prompt the younger generation of the Waodani to search for more sustainable livelihood alternatives.

Readiness to embrace community-based projects

A majority of the focus group participants from all the communities - including those who live close to the markets in Guiyedo and Batabudo - expressed openness for alternative livelihoods such as fish pools, growing cacao, or tourism. These activities are seen as opportunities to obtain goods and earn money in ways that are more sustainable than the reliance of the oil companies. In the study, they were often expressed by women:

It is best for us to work with cacao and tourism. The work is hard, but with time we will have some money and it is important for us. It's better than oil money (Participant #1.1, Guiyedo /Timpoka).

We want to construct little cabanas for tourists because there are many animals here. We can also have a bigger cabana for the cultural events and our museum. Tourists can come to this cabana for events and then go and sleep in the little cabana. This you can have for long time, even after oil is gone (Participant #1.2, Kiwado).

Additional motivational factors behind this pronounced openness for economic alternatives relate to health-related concerns and the importance of education in the changing world:

Before oil, the Waodani lived free in the forest and they did not need clothes, money, education. They had everything they needed. However, when the oil business came and the Waodani entered the Western world, they had to change. Now they need clothes, and education [...] education to defend themselves and to take care of themselves. Waodani never got sick and now they are getting sick from the contamination and contaminated food so they need doctors. You need money for that (Participant #1.4, Guiyedo /Timpoka).

As in other contexts, ensuring educational opportunities that would be beneficial for children is especially important for Waodani women:

We want to have projects here like tourism, because it will allow us to get some money we can use to pay for education. It is not for us, this is for our children; we want them to be different than us, educated. (Participant #1.2, Kiwado).

Reiterating some of the points addressed earlier, these words describe the new reality that has emerged as the result of the Waodani's insertion into the modern world. Cash income, various services, and goods unknown in the earlier times have become an inescapable part of their daily existence.

Individual interviews with external actors corroborate the statements obtained from the focus groups and give further proof of the Waodani's openness to innovative approaches of managing their SES. Agriculture and tourism were mentioned, for example, as some of considered alternatives:

Cacao, they embraced it really quickly. Of course, it is not in their culture to be agriculturists. They are mostly hunters and gatherers, but they know that they can't make money of that. For them cacao seems to be one of the options to gain important income and, for now, it seems to be working (NGO Representative, #5).

The Waodani want different livelihood choices such as tourism, handicrafts, or growing cacao. They realize that this might be an important way of gaining some income. It's just the question of helping them, but readiness is there (Government Representative, #14).

Moreover, the Waodani embrace the innovative Socio Bosque program (Section 4.4.2). In May 2013, there were four communities enrolled in the program, with Kiwado being the first one to join it. During focus groups, the importance and benefits of the Socio Bosque program were frequently acknowledged. Participants discussed the program's advantages but also responsibilities that joining it entails. One young community members said:

We know that this might not be easy process and we have to learn a lot [...] We still do not know well how to manage the project, but we want to learn. We have to try Socio Bosque because it can give us money to conserve our territory and give us projects to help us to live better (Participant #2.6, Kiwado).

This statement and, especially, the view that "this might not be easy" which was reiterated by other younger Waodani, might indicate that some younger Waodani clearly see the need for change in how the SES is being governed. They realize the difficulties lying ahead but are willing to take risks that can provide them with new opportunities. Such attitudes can be conducive to the implementation of ACM in the future. It suggests willingness to learn and take risk that can lead to management experimentation and learning-by-doing (Berkes et al., 2003; Armitage et al., 2007; Sections 2.2.4.2 and 2.5.2). Furthermore, the Waodani's awareness that change "might not be easy" could help them in persisting through the lengthy processes of iterative learning.

A strong motivational drive to participate in alternative management approach - such as the Socio Bosque program - might stem, especially in the case of Kiwado, from the desire to preserve fauna and to become independent from the oil industry. As argued before, it is in Kiwado where attachment to forest resources for daily subsistence remains especially strong. In light of this fact, searching for ways of living than do not pollute water or harm the forest becomes an imperative. Again, therefore, the conditions for ACM - in this case, importance of the resource and readiness to accept change - overlap each other and signal, in their totality, which communities within the SES might be open to future implementation of ACM.

Readiness to collaborate with external actors

Regardless of the location of a given community, almost all participants in the focus groups expressed their readiness to fully collaborate with external actors during the processes of implementing community-based projects that entailed co-management, such as Socio-Bosque, handicraft production, or the river turtle management program. This willingness to collaborate with external actors was driven by a number of factors. Firstly, there was acknowledgement of the deficiencies in local management capacities:

When there is a problem, it is fine if people from outside come and exchange ideas how to manage the territory. We do not have capacity to resolve all our territorial problems and we need help (Participant #1.5, Kiwado).

We need not only money but also ideas on how to manage our land and we need a lot of training. We still don't know many things and working together with others is important because it helps us to manage our territory better (Participant #2.6, Guiyedo /Timpoka).

Such an admission of one's own deficiencies is an indication of reflexivity and to learn from mistakes, which suggests openness for both single and double loop learning that are crucial to the facilitation of iterative learning (Armitage et al., 2007; Section 2.5.2). Secondly, there is a growing consensus that working collectively is an effective strategy to confront problems facing the SES:

Yes, working together, talking to others [...] planning together, all this is important for future and to resolve the problems we have with our territory (Participant #2.2, Batabudo).

Thirdly, the Waodani align themselves with the notion of polycentric governance (Folke et al., 2005). They realize that, in order to enhance their livelihood strategies, they need some external assistance that translates into both an ongoing presence in the communities and advice in management approaches and decision-making processes:

We need people who want to come to our community to help and start projects. We need projects here because we want to have a better life and we need money to send our children to school. Our doors are open to everybody who wants to help (Participant #2.2, Kiwado).

Although for some Waodani collaboration might still be understood as a one-way relationship based on obtaining projects and training, statements like “*working together, talking to others*” demonstrate the indigenous people's increasing readiness to share and exchange management knowledge. Indeed, when speaking in greater detail and, specificity about collaboration, the Waodani appear to favor factors that are conducive to ACM. Firstly, they insist on broader participation of local Waodani in any future multi-actor initiatives:

We want that people, more people come here to have meetings in the community. People need to participate actively in meetings and not only hear about what happens from the president (Participant #1.2, Kiwado).

It is better if more people are participating, and ask what should be done [...] because it concerns all of us (Participant #2.3, Batabudo).

A wider participation in decision making processes can invest ACM with a greater degree of legitimacy and thus assure its sustainability over a long period of time (Kofinas, 2005). It is especially important in the Waodani cultural context which is still affected by lingering egalitarianism. As already argued, local community leaders, if not consulted, can undermine projects previously agreed upon by external actors and NAWA (Section 7.2.2.1; pers. obs.). Furthermore, a broader and more multi-layered participation in collaboration can endow ACM processes with managerial diversity or even redundancy (Section 2.5.2).

Finally, the discussion of the Waodani's openness for exploring new ways of securing livelihood and their readiness to participate in collaborative projects with outsiders needs to address the indigenous people's traditional values. On one hand, the Waodani's historical self-reliance should discourage participation in collaborative projects. On the other hand, however, as already argued in Section 3.3.1, throughout their history, the Waodani were hunters and gatherers, and - as in the case of other hunters and gatherers societies (Lee, 1979; Applebaum, 1985; Gowdy, 1998) - pursuing this way of living necessitated discarding settlements and exploring any opportunities coming their way (Rival, 2002). In their cultural self-construal, change was the only constant. As Robarchek and Robarchek (1988: 115) state, the Waodani believe that the 'world exists for human to exploit'. Fearlessness and willingness to take risks were also noticed by external actors working with the Waodani:

They are not shy; they are bold and fearless about trying things and knocking at everybody's doors. I look at this as something very positive (NGO Representative, #6).

They are always eager to try new things or explore new opportunities. It is part of their nature as hunters and gatherers. They are not afraid of anything. If they think something will benefit them, they will try it (NGO Representative, #12).

In a sense, therefore, it could be argued that the Waodani psyche already encompasses the notion of openness to change. They are predisposed to it as a strategy to ensure survival. What this change involves might be different now than in earlier times, but there still exists a socio-cultural basis for it. It is, indeed, one of the Waodani's distinguishing features that they are ready to embrace new ways of living while remaining the same at the core. As Kane (1995: 137) writes, the Waodani strive for "a traditional way of living enhanced by certain modern tools that offered access to an *abundancia*". Paradoxically, however, there is a downside attached to the Waodani's willingness to collaborate with various people who come to their territories. As stated by one of the participants, "*we want to work with anybody, anybody*". However, an unfiltered influx of so-called 'opportunities' makes the Waodani vulnerable to being taken advantage of. Given their relatively short period of contact with the outside world, the Waodani might fall prey to disingenuous schemes – such as the Eco-Genesis

scandal (4.3.2.1) - as the decades of their dealings with the oil companies have demonstrated (Rivas Toledo and Lara Ponce, 2001, Ziegler-Otero, 2004). This is an issue that Ziegler-Otero (2004: 95) also addresses. In the late 1990s, he writes, “there was a steady stream of visitors. These were visitors representing a wide range of interests and attitudes, and reflect the different forces swirling about the leadership of ONHAE”.

The reality described by Ziegler-Otero is even more evident nowadays. Often, when visiting Puyo, I could see various people coming and going: students, representatives of different organizations or oil companies, and government workers. Whenever I asked the Waodani about these visitors, they always responded that they were trying to get some projects going and these people might be helping them in achieving this goal. Again, the question of the feasibility of these projects or even their sincerity was hardly ever taken into consideration. The danger stemming from the Waodani’s eagerness to jump into externally-driven schemes was directly addressed during the interviews with external actors:

In terms of collaboration with the Waodani, many organizations come to help them, but some also come here to just take advantage of them, they use them to get funding and projects. To identify organizations that come here to really help, it is very hard. The Waodani have been taken advantage of all the time from the very beginning of their contact with the civilization (Government Representative, #7).

In the name of the Waodani, there are so many things being done, so much publicity, so many different projects, but there are not many benefits for them. They continue to struggle with the same problems as before and their living conditions did not change for better at all and only got worse (Government Representative, #3).

Persisting through projects and collaborative initiatives: accepting the costs of co-management

In light of ACM, the Waodani’s eagerness for any new partnerships can also become a disadvantage because it can lead to changing loyalties and lack of commitment. Even though, as already mentioned, the Waodani increasingly recognize the necessity of engaging in lengthy collaborative initiatives, this has not been equally acknowledged by external actors working with them:

The problem is that the Waodani come to our office and they ask for one thing and then they go to another institution and then they ask for exactly the same thing. They arrange a tour and ask for the same thing from everybody. They will also do it after you have already told them that you would give them what they asked for, but they still keep on cruising (NGO Representative, #12).

They can have a meeting with NGOs, conservationists, and they will be all in agreement that they should protect the forest and animals. However, if they are with the oil companies or government, they will be promoting other things they need. Their logic is to take advantage of everybody and please everybody [...] but this does not lead them anywhere in the long-term (Specialist, #3).

In general, the Waodani's behavior, which could be summarized as trying “*to take advantage of everybody and please everybody*”, is perceived by external actors as a calculated or premeditated approach. Regardless of the accuracy of such a perception, the very fact that it exists could lead to undermining trust-building efforts which are essential to forging truly participatory initiatives on which ACM depends (Kendrick, 2003; Folke et al., 2005; Kofinas, 2005; Hahn et al., 2006; Section 2.5.2):

When I talk to many Waodani and their leaders they always tell me what I want to hear. So I am falling in love with them [...]. This is usually what seduces co-operation. If they deliver a speech about the importance of conservation and responsible resource management to the director of USAID they can get what they want. But then, they will redo this speech and deliver it to an oil company to get something different. They have learned that it works every time they do it. At the same time, we have less confidence about working with them because it makes it hard for us to believe or trust them (NGO Representative, #11).

Again, it is the cultural legacy of being hunters and gatherers that the Waodani bring to the negotiating table. Always being on a move, these descendants of nomadic people keep searching for new opportunities that in the modern world manifest themselves in different ways (Kane, 1995; Robarchek and Robarchek, 1998).

Importantly, however, it needs to be acknowledged that the Waodani's seemingly disingenuous behavior is also the result of their economic desperation. They might feel compelled to abandon inconvenient or lengthy commitment in order to meet their daily needs. Such attitudes could impact on the feasibility of any future ACM in the Waodani SES. Although appearing ready to enter into co-management initiatives aimed at ensuring resource sustainability, the Waodani remain tempted by offers coming from oil companies and others which, though less sustainable, can provide more immediate benefits to these economically marginalized people. Indeed, in the past, the Waodani's frequent denouncing of oil exploration on their territories and their expressed wishes to enter a more ecologically sustainable path were then followed by signing up contracts with oil companies (Narváez Quiñónez, 1996; Ziegler-Otero, 2004). Therefore, any long-term ACM initiative in the Waodani territories will need to successfully fend off competing short-term or socio-ecologically detrimental opportunities to which these indigenous people have been historically and economically prone to, and which contributed to the creation of *el modelo asistencialista* as a contextual barrier to building resilience (Section 4.3.1).

Finally, the Waodani's tendency to hastily jump into any new opportunities leads them to abandon projects or initiatives that have already been started. Their determination to accept time and effort demands of a given project tends to fade away when something else catches their attention:

We were constructing latrines in Batabudo because the community wanted to have ten latrines. Once we finished their construction, the community did not want to use them

and care for them. Now, they told us that they want pools for fish farming because they saw the provincial government constructing pools for colonists [...]and now they want the same (Oil Company Representative, #4)

They come back to the communities after a meeting with an organization or government people and they are full of enthusiasm and readiness to do things [...] but, then, gradually it all fades away (Government Representative, # 8).

The problem is that they demand from us to be hired as mechanics, security guards, or something else. For this reason, some time ago we tried to train them and prepare them for work but after 4-5 days they decided not to work anymore. They said that were tired and they left their job (Oil Company Representative, #1).

The Waodani also display a lack of consistency in sticking to their demands and needs:

I also have experiences with Batabudo. The Waodani from this community come here and complain about their problems with the oil company that is operating there. They usually want us to help them with letters of complaint and resolve problems. Then the oil company sits down with them, explains something, maybe promises something and then they withdraw their complaint. How can you continue collaborating with them if one day they push one process and then the next day they withdraw themselves from it? (Government Representative, #5).

Importantly, however, the Waodani's behavior needs to be seen the context of a reality they have been forced to accept and navigate. Failure to stick to demands might reflect the Waodani's realization that they constantly need to compromise and even give up on principles in order to survive. Unfortunately, the oil industry - despite all of its problems – has been the only external actor that has remained in the SES over the decades. Antagonizing such an actor might therefore be a luxury that the indigenous people operating in the world of limited opportunities can hardly afford.

The external actors also faulted the Waodani for their failure to sufficiently maintain some of the already introduced initiatives. In this case, instead of conflicting opportunities, it is the lack of an on-going external supervision that can derail alternative livelihood projects. Once external assistance is removed, it was argued, the Waodani lose interest and motivation to carry on. Subsequently, projects are neglected or entirely abandoned. Certainly in the context of implementing ACM initiatives that require both a considerable time investment and iterative learning, some Waodani's relatively low self-motivation presents a challenge:

There are projects that were executed and they are successful, but once they finish the Waodani do not maintain the processes and the project fails (Government Representative, #1).

In terms of portable water, two years ago, we set up the water tanks in Batabudo and Tigüino. We helped them with the financial resources and trainings. MIDUVI²⁶ gave

²⁶ MIDUVI is an acronym for the Ministry of Urban Development and Housing (Ministerio de Desarrollo Urbano y Vivienda)

them training in the water system and we installed the whole pump system that they have to monitor and maintain internally. But after everything was installed, the system only worked for 15 days. After that all the parts of the pump system were taken apart and sold [...]. Now, of course, this project is no longer working (Oil Company Representative, #4).

I see them in a positive light. They want to try new things and they are enthusiastic about any new idea that comes their way. The problem is that they usually do not maintain anything long-term. Still if you have someone who is with them, like a technician or coordinator, someone who guides them and pushes them, then, I think, this is possible for them to last through processes (Government Representative, #10).

Although the Waodani's way of living is mostly sedentary in the modern times (Section 3.3.2), their tendency to drop things in an instant and their preference for consumption over production (Yost, 1981; Rival, 2002) might tend to persist on a psychological level. In this respect, the Waodani are not unique among hunters and gatherers. For instance, 'immediate-return societies' among hunters and gatherers tend to live day-to-day from hunting and gathering (Gowdy, 1998). In this context, persisting in a work environment that requires consistency can become challenging. Furthermore, many of the tasks described in the participants' statements - such as a mechanic or a security guard - define work that is easily distinguishable from leisure time. Still, in many hunter-gatherer societies, the distinction between work and leisure time is absent, as the former is naturally integrated into the latter (Applebaum, 1985). It is thus possible that, on some level, such a less identifiable concept of work and a preference for 'consumption over production' (Section 4.3.2.1) continue to impact on the Waodani's functioning in the modern labor environment.

Importantly, however, the study also shows that this cultural barrier might be less applicable to the younger generation of the Waodani. Statements obtained from younger leaders and younger community members reveal that they might be more willing to work on projects and maintain them through the various stages of implementation, even without financial compensation:

I understand that sometimes, if you believe that something is really important, you have to work for free before you can get paid. Older people would never do it, but I work with NAWA to develop radio communication programs for the Waodani and I am not getting paid, because there is not funding for this job (Waodani Leader #4).

We work hard now and we take care of cacao because we can earn some money by selling it. Usually on Sundays, when we do not work on the road, we work here in our chacras to keep cacao clean. We like it and, in the future, we want more (Participant #2.2 Guiyedo /Timpoka).

Not working and doing nothing and waiting for others to give us things is not good. We need to change and work more every day, so we and our children have a better future (Participant #2.5, Kiwado).

It is best for us to work with cacao [...] to have income. The work is hard, but with time we will have some money and it is important for us (Participant #1.1, Guiyedo /Timpoka)

My own experiences give additional support to a tangible shift in the Waodani's attitudes towards working. I remember that when the Fundacion Natura was promoting cacao plants in Guiyedo communities, there was a lot of skepticism as to the Waodani's readiness to persist through the project. However, almost three years after the initiation of the project and with the Fundacion Natura long gone, I could see that many families continue to grow cacao and even started selling it at the local market.

The change in attitudes towards work, especially among younger Waodani, was also noticed by some external actors working with the Waodani:

Now we can see that the Waodani, especially the younger ones, are proposing things and working closer with institutions [...] it might be easier to work with them now. I believe that the new generation of Waodani has a greater capacity to move things and persist through efforts, while more actively being involved in projects (Government Representative, #1).

Again, therefore, the complexity of the studied context emerges. Although, it is likely that the generational shift will make more Waodani willing to 'work hard' and persist through projects, it is difficult to say when such attitudes become prevalent, given the continuous impact of *el modelo asistencialista* in some parts of the territory.

7.4.2 Openness to accept rules/sanctions and conflict resolution mechanisms

As argued in section 5.2.2.1, rules and sanctioning mechanisms are essential to the implementation of any co-management initiatives. In the present study, this condition for ACM was assessed from two perspectives: the Waodani's expressed views and attitudes towards rules and sanctioning mechanisms and concrete institutional changes that were undertaken by communities and the nationality as whole to deal with this issue.

Expressed views and attitudes

The collected data indicate that a number of participants are still influenced by the cultural factors that underlie the lack of enforceable rules and sanctions (see Section 4.3.2.2).

The Waodani are free people [...] how can we tell other people what to do? (Participant #1.4, Kiwado).

Setting up land use zones for the communities is not good, because it does not allow us to move freely across the territory. Some communities do not allow you now to enter their area because they say this is their forest and we can't use it. This is bad,

because as the Waodani we live in one territory and now it is being divided (Participant #1.1, Batabudo).

It is difficult to tell our people “do this” or” don’t do that”. We are not like that, never have been. Our land belongs to all of us and people don’ want to have any limitations about what to do with this (Participant #2.3, Guiyedo /Timpoka).

In some respects, the present study partly supports Lu and Wirth’s (2011) conclusion that in the Waodani society there is still no widespread agreement on how to deal with resource conflicts and abuse. It could be thus argued that the centuries-old legacy of egalitarianism, individualism, self-reliance, and autonomy continues to persist and renders formal rules or any other binding limitations antithetical to the traditional cultural script (Section 4.3.2.1). This reality could immensely complicate an introduction of enforceable rules that are required to prevent what Hardin (1968) coined ‘tragedy of commons’: a situation where some individuals are benefiting from the uncontrolled extraction of resources, while everybody else bears the cost of degradation (Lu and Wirth, 2011). One of the participants addressed the challenge of the traditional views clashing with the modern realities:

Some communities are developing their rules of where to hunt and where not to [...] but this is hard for the Waodani to accept. Our grandparents have always used the territory and forest for hunting and gathering the way they wanted and this might be difficult to change. The problem is that now many Waodani are selling animals and trees just for their own benefits and nobody is doing anything about it. They damage our territory and our forest (Waodani Leader # 7).

The persistence of the extreme individualism into the twenty first century brings challenges which the earlier generations of the Waodani did not have to face. As discussed in Section 3.2.2.1, in the earlier times, the lower population density and the nomadic lifestyle allowed the forest and fauna to recuperate. Furthermore, the Waodani’s lack of access to modern hunting technologies and market forces helped to keep resources sustainable over a number of centuries. In such a reality, having rules and conflict resolution mechanisms was neither desirable nor necessary (Yost, 1981; Lu, 2001, Section 4.3.2.2).

Furthermore, the persistence of some of the traditional values and beliefs in a new reality which is ill-suited for them explains the Waodani’s reluctance to infringe on anyone’s freedom, which can occasionally lead to their disregard of the most egregious offenses. During one of the meetings devoted to updating the NAWE statutes in Toñampade in 2011, I witnessed a discussion about the falsification of a signature. Pedro (NAWE president) accused one of the Waodani of having forged his signature to obtain permit for cutting trees in the area of Toñampade. A letter with the forged signature was shown by Pedro during the meeting. He denied that it was his signature because he had a special stamp that he had always used to avoid falsifications. Interestingly, the discussion happened at the same time as people were talking about sanctioning Waodani who had committed any type of felony. Still, there was no reaction from the participating Waodani and no follow-up discussion on

how to sanction the person who had forged Pedro's signature. Therefore, once a real case of breaking rules comes up, the Waodani still remain evasive in their ways of approaching it.

There were more statements obtained during the focus groups that reveal the Waodani's inability to deal with transgressions and internal corruption:

To sanction someone, usually community gets together to discuss what to do [...] but then they only talk and then the next day they have festivities and they forget about the problem. After that nobody ensures that any sanctioning takes place (Participant #1.5, Guiyedo /Timpoka).

We have many bad leaders that steal and they are using money just for their own benefits. Still, they always stay with NAWA and keep stealing money. Nobody does anything about it (Participant #1.6, Batabudo).

Moreover, in the context of the present study, the Waodani's failure to establish effective rules and sanctioning mechanisms was also revealed through their inability to deal with outsiders - such as Kichwa and colonists - who are encroaching on their territories:

It is difficult to control our territory since we have a big territory [...]but we have to do it for our children and grandchildren, we have to protect our forest and animals [...]but it is difficult and we not sure how to do it well (Participant #2.5, Kiwado).

Kichwa, yes, it is complicated and we have to think more about it, what to do, if we find them hunting or throwing barbasco into the river. I don't know (Participant #1.3, Kiwado).

The same problem was also addressed by external actors:

Kichwa and colonists are intruding on the Waodani territories, and during all the meetings with communities, the Waodani complain about it and want to resolve it. But they don't do anything that would actually help them to end these territorial conflicts. If they talk to those who enter their territory, they talk to them individually or only during the festivities. Sometimes they become violent towards intruders but they do not do anything in a formal way [...].The Waodani simply do not know how to resolve conflicts through negotiations or through some formal process. During many meetings, they recognize this weakness and in many cases they ask organizations for trainings in conflict resolution, management or negotiations. But, I don't know how much this all would really help (NGO Representative, #10).

Still, despite all these problems with the notion of having enforceable rules and sanctioning mechanisms, there are signs that the Waodani might be finally willing to address this institutional barrier that has partly contributed to the ecological degradation of the SES. The collected data demonstrate that some participants are growing more open to the idea of having enforceable rules and are ready to move beyond generalities in expressing their views:

There should be rules to control hunting like no hunting with guns, or only hunting a small number of animals per family [...] for example, two monkeys per month, do not kill young animals (Participant #2.3, Kiwado).

Waadani from Dikado²⁷ are also coming here and they throw barbasco into the river to fish. It is important to place a control point between Dikado and the Yasuni park [...]. The MAE should control the entry to the park over there (Participant #1.1, Guiyedo /Timpoka).

We have to better control our territory and the forest. We should have a radio to talk to the Ministry of Environment if we find someone hunting here. We can also stay and protect our beaches so people do not pick turtle eggs to sell them (Participant #2.6, Guiyedo /Timpoka).

We have to start thinking about sanctions [...] develop them and use them. For example, if someone hunts in the conservation area and does not respect rules, we can ask him to pay money or work as a park guard without salary (Participant #2.6, Kiwado).

Overall, therefore, in regards to rules and sanctioning mechanisms, two different views or attitudes emerge. On the one hand, the continuous adherence to the notions of individualism, autonomy, and ‘open territory’ made a number of the participating Waodani unable or reluctant to consider rules and sanctions (Section 4.3.2). On the other hand, however, some other participants show readiness to consider them, especially in the light of the challenges that an increasing access to the market and modern technologies presents. This emerging readiness - although it is still not acknowledged on a large scale in the Waodani communities - can be seen a positive development, especially since it is evident in all the communities. Still, given the study’s qualitative approach, it was difficult to reliably establish some general characteristics of people who were more willing to accept sanctioning mechanisms. A future quantitative study that enrolls a large number of participants to obtain statistical data might shed more light on this issue.

Institutional developments: Mapping and resource management rules

A need for having management rules and sanctions is not only verbally acknowledged by some Waodani, but also finds its reflection in management and institutional changes. Firstly, the Waodani participating in the IMIL project (Section 4.4.3) demonstrated their interest in conservation by actively undertaking community mapping²⁸ efforts and establishing resource management rules²⁹. Under the USAID funded project, WCS worked directly with NAWE technicians who led the process of the delimitation of the area of influence of those Waodani communities which expressed interest in having their own community zoning map. The area of influence was then divided into land use and management zones that included the areas of conservation, hunting, and agriculture/housing (NAWE-Kiwado, 2011). These efforts resulted in delineating some portions of the Waodani land as a

²⁷ Dikado is located in the WER near the border with YNP

²⁸ See Section 4.4.3.

²⁹ The resource use and management rules were established in the participatory manner during the meeting with the whole community, when the final community zoning map was presented. The local leader and NAWE technicians who led the mapping process led the process of rule establishment for each land-use zone. Ideas for the rules were collected on the board and then each one was discussed, modified and agreed upon.

conservation area that would be governed by a set of specific resource and management rules (Custodio et al., 2008, 2009; Arce et al., 2009, 2011; Landivar et al., 2010; Espín et al., 2010; Stocks and Espín, 2010). For instance, Kiwado prohibits cutting trees, gathering river turtles' eggs, and hunting lizards or any other animals for commercial purposes in its conservation zone (NAWE-Kiwado, 2011)³⁰. Importantly, the new rules do not prohibit subsistence hunting in the conservation area; only hunting that is conducted for commercial purposes. As a result, the rules envisioned in such a way might be more acceptable to the communities and can carry a greater likelihood of being conformed to.

The Waodani's participation in the zoning and mapping activities is also the result of them coming to a realization that their territory is too vast to be effectively managed without rules or regulations:

We have a big territory and each community manages it in a different way. In some parts of the territory, there are a lot of problems with animals but we want to ensure that our kids still have forest and animals. It is important for us to change how we manage the resources and it is important for us to have maps of each community. This way we can have smaller management zones and each community can take care of its area. They can talk to NAWÉ, the Ministry or go to the government and show where they want to have tourism. They can have their own guards and protect themselves from outsiders. It is easier to do it for each community than for the whole territory (Waodani Leader, #3).

It needs to be emphasized at this point, however, that the concept of the divided territory remains a sensitive and controversial topic for the Waodani. As mentioned earlier, the opposition to this concept might be taken to the extreme as “some communities do not allow [other Waodani] now to enter their forest”. This ‘appropriation of the territory’ has been noted in Lu and Wirth’s paper (2011: 234) as evidenced in the quote: “all Waodani would have to ask for permission to enter, and if they did not, they could be killed” . Still, in spite of all this, the admission of some Waodani leaders that their territory might benefit from some form of the divided management shows an emerging readiness for management experimentation. The fact that such a view is still not uniformly shared among the Waodani does not preclude the possibility of its gaining momentum in the future.

Institutional developments: NAWÉ Statutes

Recent statutory changes to the Waodani's governance structures also demonstrate a positive institutional transition in regards to rules and sanctions. In 2011, four workshops in various Waodani communities (Toñampade, Dikado, Batabudo, and Gadenó) were organized to revise the current NAWÉ statutes that were originally adopted by ONHAE from the Shuar nationality (pers. obs.,

³⁰ The resource use and management rules were established in the participatory manner during the meeting with the whole community, when the final community zoning map was presented. The local leader and NAWÉ technicians, who led the mapping process led the process of the rule establishment for each land-use zone. Ideas for the rules were collected on the board and then each one was discussed, modified and agreed upon.

Section 3.2.2.2). For instance, the revised statutes (NAWE, 2012: Art. 57) stipulate the formation of the Disciplinary Board (*Consejo de Disciplina*) composed of presidents of all communities and associations of the Waodani nationality. This Board is granted rights to define and impose sanctions on members of the Governing Council and leaders of communities or associations. These sanctions would depend on the seriousness of an offence and could include: (a) verbal and written warning, (b), temporary suspension, (c) definite separation and (d) expulsion (Chapter III) (NAWE, 2012, Art. 17). In addition, Chapter III of the statutes lists sanctions that should be applied to NAWÉ leaders (NAWE, 2012, Art. 17) who have been found guilty of breaking communal rules. For instance, obtaining personal benefits at the expense of the community is to be punished by expulsion.

Such developments are important because they indicate that the Waodani are moving beyond the extreme individualism that has characterized them for centuries (Yost, 1981; Robarchek and Robarchek, 1998, Section 4.3.2). In a broader context, the introduction of sanctions also signals a change of guard in the Waodani society. This process coincides with coming of age of young Waodani who have grown tired of leaders committing offenses and never being punished for them (Aviles, 2008). Indeed, during the focus groups, the young Waodani were especially vocal in their disapproval of corruption, selfishness, and lack of concern for community problems:

It is important for our statutes to deal with problems of our leaders. It has been such a long time and nothing has been done, and they are doing wrong things all the time. Old ways of punishment no longer work. We have to punish people differently, too [...] like going to jail, returning money they took, and being thrown out from our communities (Participant #1.7, Batabudo).

We don't want anybody in NAWÉ who commits crimes. It is in the statutes. Anybody who committed a crime has to leave the organization forever and never come back (Participant #1.3, Guiyedo /Timpoka).

Overall, therefore, there is growing openness on the part of the Waodani - especially, the younger generation - to the very idea of having resource management rules and sanctions; a notion that would have been difficult to imagine a few decades ago. A broad embrace of such a change is still far away, but first steps have already been taken.

Moreover, what is especially important in the context of the present study is that experimenting with rules and sanctions - such as the implementation of the NAWÉ statutes - is an indication of reflexivity and learning from mistakes on the part of the Waodani residents:

Only money for beer and for nothing more [...]. We start losing animals but gain nothing, instead. It's time to start thinking about different ways to manage our territory for our children [...] because the way we managed it in the past did not get us anywhere (Waodani Leader, #5).

It is important to look and see changes in the number of animals we have and learn from this. We should no longer hunt a lot. Our grandfathers and parents were hunting all animals they encountered, but now we have to change. This is why we need park guards in the community doing monitoring so we can see what is happening with animals and plants to manage them better (Participant #2.3, Kiwado).

It is important to learn from others' mistakes. In Dikado, there are no animals because people hunt too much. Now they complain that they have no animals and we do not want that. We want to have the forest with birds and animals and this is why we have to manage our territory well. (Participant #2.3, Kiwado).

All these statements show the Waodani's willingness to critically re-evaluate their ways of using resources. As already argued, this type of re-evaluation of basic values and management practices, which is often referred to as double loop learning (Armitage et al., 2007, Section 2.5.2), is especially conducive to the processes of ACM.

Furthermore, some Waodani's intention to learn from "others' mistakes" is indicative of a positive trend taking root in the nationality. Uttered by a Waodani from Kiwado, the statement indicates that both direct and indirect learning can cause alteration in views or behavior, and, as demonstrated above, become a catalyst for collective action aimed at ensuring that resources are managed in a sustainable way. The Waodani's statement is, thus, closely related to "building memory of past events [and] increasing the ability to learn from crisis" (Berkes, 2007: 288), which underpins the first factor of adaptive capacity (Folke et al., 2005).

Even though the rules are not yet accepted by everybody and the notion of territorial zoning, for example, is still met with criticism among some Waodani, a growing openness towards "*thinking about different ways to manage our territory*" could set the tone for more creative and experimental management of the SES in the future. Indeed, adjustments to any regulations can only come after a long process of trying them out. This is the essence of hypothesis-testing that partly defines ACM (Armitage et al., 2007). It could be argued, therefore, that the Waodani's road towards establishing rules and sanctioning mechanisms needs to be thorny and tortuous, at least for a while. A prolonged internal struggle and reflecting upon difficult choices might be a necessary step preceding an introduction of lasting institutional changes. Going through a slow process of readjustment could lead to a greater acceptance of management strategies that are critical to ensuring the sustainability of the SES.

7.4.3 Openness for education

Openness for education and capacity building enhances the quality and extent of co-management processes (See Section 5.2.2.1). It allows for a more productive knowledge exchange and can thus endow ACM with a greater level of legitimacy. This might be especially important in case of multi-

scale collaboration because it can narrow the epistemological gap between indigenous people and external actors.

Expressed awareness of the lack of education

As discussed in Section 4.2.1.2, the lack of education is one of the greatest concerns for the Waodani. The data collected during the focus groups also indicate that the Waodani realize that the lack of education prevents them from taking advantage of many economic opportunities that their SES could offer:

We do not have enough people who would know how to manage projects with communities and for the nationality as a whole. We do not have any experience in managing projects such as Socio Bosque and if you do not have the technical capacity you can't do it well (Waodani Leader, #5).

We do not have a good education; we do not have good professors and school materials. This is a big problem for us, because we can't get any jobs outside so we could support our families (Participant #1.1, Guiyedo /Timpoka)

Education is the most important thing we can give our children; without it they will be nobody (Participant #1.2, Kiwado).

The last two statements were made by the Waodani women, which points, again, to the importance of including the educational component in any future ACM collaboration, especially given the growing role of Waodani women in managing and determining the future of the SES (Aviles, 2008)

A sense of desperation about educational unpreparedness is also pronounced among the young people who will likely be in charge of any future ACM initiatives. Paradoxically, educational deficiencies have become more evident to them because of the opportunities that have only recently manifested themselves with the introduction of the constitutional and legal changes (Section 4.4). They are realizing that educational deficiencies are holding them back. One of the young Waodani participating in the focus groups clearly expressed this sentiment:

We used to work for the oil companies, but we were hired for short periods of time, to clean the road, or do something manual. We always got some money, but the money ended and we can't find more jobs. Oil companies make it difficult for us to work and we have nowhere to go because we do not have any skills. Now the government comes and asks for proposals because it says that it will give us projects. But we do not know how to write proposals or manage projects. There are many opportunities now but we do not know how to take advantage of them (Participant #2.4, Guiyedo /Timpoka).

External actors also noticed the Waodani's frustration about the lack of education:

What we have seen recently is that the Waodani realize that education is something that can help them improve their lives in the future. Many Waodani come here and they are frustrated because they feel that they are lacking a lot in the area of education. They are definitely aware that this is their huge weakness. They want to have a better level of education for their children, that they learn how to use a

computer, how to use the internet or learn English. They see education as a tool that will help them survive (NGO Representative, #1).

Acknowledging the importance of education

The Waodani's frustration with the lack education also derives from the fact that they see it as an opportunity to escape poverty on an individual level. It is especially evident among the younger Waodani, some of whom have already been enrolled in course offerings and thus exposed to the formal educational structure:

I want to finish many courses and get my diploma. This is very important for me to get a job (Participant #2.6, Guiyedo /Timpoka).

Yes, we want to get a certificate after a course. The certificate can help because it shows that we study and is also good because many companies need us to show a certificate so we can get work with them (Participant #2.3, Kiwado).

Furthermore, they also realize that quick and unsustainable economic benefits are not the way to go. Instead, they see education as a path to sustainability over a long period of time:

We want to have projects and training and not only money. With projects we can develop and learn things and this can be better for our future and for our community. Money ends quickly and if we do not know how to manage it well, and our territory, we can't take advantage of many projects that are available to us. We want something for a long-term [...] if not, we'll just spend money and there is nothing left. With training and projects we can make money in the future. (Participant #2.6, Kiwado).

My own experiences with the nationality also point to an increasing recognition of the importance of education among community members. The Waodani constantly ask WCS for certificates for the courses they have just finished with the organization. Apart from evoking a feeling of pride and accomplishment, these certificates have practical implications. Although, for now, they might serve as a way to secure employment with the oil companies - which continue to be the main employer in the SES (Section 4.3.1.2) - their overall significance goes beyond the petroleum industry. Some of the Waodani are already starting to present them to other potential employees such as the Ministry of Environment and the Ministry of Justice. What is especially important is that a number of the Waodani tend to view education and capacity building as more important than a short-term financial assistance that has kept them in poverty for decades.

Education is also viewed by the Waodani as a path towards greater political power and an effective tool in managing territorial issues or conflicts:

Shuar have their people in the government and they do good things for their nationality. We do not have anybody in the government who can help us and who can fight for us. We try to apply for some positions with the government, but we are not well prepared for it and they want people with education, at least with a high school

diploma. Now there are more Waodani finishing colleges and universities, but we still don't have enough people with better education (Waodani Leader #3).

We need people like lawyers that can help us protect our territory. We do not have these people and this is the problem for the Waodani. For example, Kichwa enter our territory, and we need someone to sit down with them and defend our land. We have to see who can go and talk to them, who can sanction them [...] We need someone who has the capacity to do that. This is what we are missing. This is my worry for the future (Participant #1.5, Kiwado).

In a related issue, education is perceived as a tool that would allow the Waodani to become self-reliant again:

We need education because then we can be lawyers and doctors to defend ourselves and take care of ourselves. We do not want Cohouri to do that, only the Waodani themselves. (Waodani Leader, #9).

In essence, therefore, the Waodani also look to education as an opportunity to reclaim a feeling of self-reliance that had characterized them for centuries but that has been partially lost as the result of having grown dependent on missionaries and oil companies. From the perspective of a poverty trap conceiving of education as a way to greater self-determination is a highly positive sign. It could lead to parting with the notions of dependence and passivity (Section 4.3.2.1) and engender, instead, a sense of self-determination and self-efficacy among community members that could, in turn, promote collective action and multi-level collaboration.

My own experiences and observations confirm that the Waodani perceive education as a tool to regain a sense of self-reliance. For instance, during a two-day meeting - organized by the Ministry of Environment, in March, 2011 to discuss the Yasuní National Park's Management Plan - some of the participants talked about their expectations and needs. The Waodani uniformly expressed their interest in capacity building activities and in attaining professional qualifications that would enable them to take advantage of emerging opportunities. What is crucial in the context of ACM is that they perceived a direct link between better education and the ability to manage resources on their own or in a collaborative setting.

Participating in educational initiatives

The focus groups and interviews also indicate that the Waodani's awareness of the importance of education and their own lack of it has led to some concrete actions. In Guiyedo, for example, community members put pressure on Repsol-YPF to divert more funds towards education:

Recently we have also started to talk more with Repsol about the quality of our education. This is why now we have this college in the community and during the next three years we will be studying here and staying with our families. (Participant #2.4, Guiyedo/Timpoka).

When I conducted these focus groups in 2012, the so-called distance education college was already operating and thirteen students were enrolled there. Some of them came back to the community to study because they felt that this was an opportunity for them to be with their families in the forest at the same time as they were studying in the program that would provide them with better options for the future. As one of the college students said, “... we are tired of short-term jobs, we are tired of the lack of stability for getting jobs and for our future” (Participant #2.4, Guiyedo /Timpoka). Interestingly, a few students from Guiyedo had been previously enrolled in an educational program in Toñampade but were expelled because of alcohol abuse. They now see their mistakes and are more dedicated to education:

For a long time, we did not understand the importance of education and we preferred to do other things. Now we see this problem and see that many our friends who do not go to college, they are not doing well because of drugs and alcohol [...] and I do not want that (Participant #2.6, Guiyedo /Timpoka).

Statements like this one not only show the Waodani’s growing appreciation of education but also demonstrate their ability to think and reflect about their own mistakes and those of the others. These mental processes are indicative of reflexivity and iterative learning that are essential in fostering the learning-by-doing component of ACM (Berkes et al., 2003; Armitage et al., 2007; Sections 2.2.4.2 and 2.5.2).

Once given an opportunity to be involved in technical capacity training programs organized by NGOs, such WCS or Randi Randi, the Waodani have always demonstrated their enthusiasm about these programs and commitment to work, including spending additional time to get things done. One of the WCS consultants working with NAWÉ wrote in her technical report:

“Es evidente el interés que los waorani tienen de mejorar sus capacidades técnicas para diseñar proyectos/ There is an evident interest among Waodani in improving their technical skills for the project design” (translated by M.B.) (WCS, 2012d: 13).

In addition, one of the Randi Randi employees in charge of training community park guards in Miwaguno in March, 2011, with whom I had an informal conversation, expressed a high level professional satisfaction from working with the Waodani. She described them as enthusiastic, hungry for knowledge, determined, and participative. She went as far as saying that it was one of the best indigenous groups she had ever worked with.

Overall, a higher level of educational preparation and increased technical capacities as well as a greater ability to deal with emerging societal, economic, and ecological challenges could make the Waodani a far more effective partner in any collaborative and experimental projects. Increased knowledge and the development of learning habits - both of which they appear to desire - could assist

the Waodani in meeting the considerable challenges associated with the implementation of innovative ACM initiatives.

Education in the context of immediate socio-economic realities

However, as in the case of some other aspects discussed so far, the Waodani's expressed desire for education needs to be seen in the context of their current economic impoverishment and their cultural preference for immediate gains (Rival, 2002; Kimerling, 2012). There is a danger that the Waodani's thirst for education discussed earlier could turn to cynicism or resentment, especially if their efforts and educational gains do not provide measurable benefits in a short-term. This is the problem that was indirectly addressed by external actors:

The problem is also that there are not many job opportunities for indigenous people who are preparing themselves at university level. One Kichwa finished Universidad San Francisco de Quito and they published his thesis. He was really brilliant, but he does not have a job. Fernando Nihua, a very intelligent young Waodani who finished the same university, also doesn't have a job. So the young people ask themselves why they are studying. There are very few opportunities for them outside (Oil Company Representative, #3).

These are, indeed, serious concerns. If there are few opportunities available for educated Waodani, benefits of education can become diluted and even rejected as a way to socio-economic advancement. Moreover, since education is rightly associated with the external world and its values, the failure of education to quickly deliver expected results might, by extension, cast doubts on benefits of co-management and knowledge exchange with external actors. Indeed, one of the Waodani in the focus groups linked educational attainment and other concepts originating from the outside world with failed economic hopes:

You can get education [...] learn about science. They are pushing all this, but even if you study hard, you may not be able to get a job anywhere[...] education may not change much for us [...] it doesn't make it any better. (Participant #1.2, Guiyedo/Timpoka).

This sense of disillusionment could even drive the Waodani to reject schooling in a defiant way and bring them back to searching for quick and unsustainable opportunities. Such attitudes could be additionally reinforced by the Waodani's cultural preference for consumption over production and their readiness to abandon things, which in earlier meant discarding their settlements and cruising the forest (Chapter 4). Currently, it could lead them to give up on capacity building opportunities.

We organized 4 day training for the representatives of indigenous nationalities in Coca to talk about the issues related to the oil politics, leadership, and resource management. This is what they always ask us for. The Waodani come for the first day and then they disappeared. They just could not last for 4 days. It is difficult for them to enter the logic of consistency and persistence, even though they are interested in the topic. (Government Representative, #6)

Interviews with the external actors brought up cases where the Waodani had discarded the benefits of potential learning altogether in a true destructive way in exchange for more immediate and short-lived monetary benefits:

We gave them thirty computers for the college. They have not even used them and one night a bus came from Coca to Batabudo. The community loaded all the computers on the bus and they sold them later on in the city of Coca. That's how their interest in access to information and education ended. As a result, we no longer give them anything. Well, in this context, I am not sure about their eagerness for learning. It just disappears once they see that they can get money, instead. Maybe, the education system for the Waodani has to be structured differently (Oil Company Representative, #4).

Furthermore, poverty is a daily and inescapable companion for the Waodani, and it could also make them forgo opportunities that pay dividends in a long-term:

Yes, it is important for the Waodani to invest in education and learning for the future, but then, education pays off only after a while, a long while. In the meantime something else that gives money and things comes along and they are ready to go for it and give up their dreams about education. You can't forget that they have pressing economic needs and it is hard to balance all that at the same time (NGO Representative, #5).

With a few exceptions, opinions like this one were expressed only by external actors. It is understandable because, as in the case of openness for alternatives, the Waodani always seek and are enthusiastic about any opportunities that could lift them from the poverty trap. They are less concerned, however, whether these opportunities are sustainable over a long time.

Overall, in the context of ACM's lengthy and effort-consuming nature (Armitage, 2007, Sections 2.6.8 and 2.6.9), the Waodani's impatience with educational benefits - which is the result of both the consumption-oriented culture and pressing daily needs - can prove a significant stumbling block to any ACM efforts. Still, given the indigenous people's growing appreciation of the importance of education in the modern world, it is feasible that some of the current challenges might be partially overcome in the future. With the younger generation of the Waodani being especially drawn to education, a hope for a better future exists. Their increasing exposure to education, strong Spanish language skills, and their considerable familiarity with the external world and its demands – in contrast to some of the older Waodani – substantiates this hope. For this potential to be realized, however, there has to be an external support present on the community level that would help in minimizing the conflict between educational and daily needs. It is for this reason, as well, that then next Chapter of this thesis concerns itself with the impacts of the external actors operating in the Waodani SES.

7.5 AN INTEGRATED PERSPECTIVE ON THE WAODANI'S LEVEL OF READINESS FOR ACM

In this Section, I employ the discussion from Sections 7.2, 7.3, and 7.4 to provide a more integrated answer to the first research question: What is the level of readiness of the Waodani for future consideration of ACM in the Waodani SES?

Analyzing the conditions for ACM in light of the Waodani's readiness for future consideration of ACM presents a picture that is complex and multifaceted. None of the conditions is simply present or absent. Instead, each of them comes with opportunities as well as drawbacks. Firstly, in the context of the window of opportunity (Section 4.4), inter-community differences in the levels of social capital (Section 7.2.1) could undermine the whole nationality's participation in the implementation of the constitutional changes and alternative economic initiatives, such as the Socio Bosque program (Section 4.4). Both of these entail generating collective action across and within Waodani communities, which could be more feasible in Kiwado, where social capital is relatively strong and was actualized with the frames of the local system, institutions and governance, than in Guiyedo and Batabudo.

The role of local and national leadership as a facilitator of social cohesion and an instigator of change (Sections 2.5.2 and 5.2.2.1) becomes therefore critical. However, the analysis shows how both local and national Waodani leaders still remain largely constrained by the same cultural barriers that have throughout the modern history underpinned the Waodani's governance deficiencies (Section 4.3.2). Current leaders are passive, individualistic, and ineffective, and they fail in raising awareness as well as in generating incentives and a motivational drive for collective action. At the present time, these deficiencies of local and national leaders could further undermine the communities' long-term persistence in initiatives such as Socio Bosque. They could also negatively impact on their ability to take advantage of other components of the window of opportunity. For example, passivity and self-centrism of some leaders could limit the potential of the Waodani to benefit from State projects, capacity building initiatives sponsored by NGOs, and the participatory spaces that have become available through the creation of the YBRMC (Section 4.4).

From this perspective, the emerging shift in views, expectations and attitudes of the younger generation of the Waodani towards the notion of leadership offers a more hopeful picture. The trend is towards demanding greater accountability and effectiveness from both local and national leaders. This trend has already contributed to the selection of pro-active local leaders and to a first attempt to revise NAWE statutes to be more in line with co-management principles. It is thus possible that, with the passage of time, a greater number of new leaders, whose values are more reflective of the challenges

facing the Waodani SES, will take over governing the nationality. This new leadership body could help the SES to overcome its governance barriers (Section 4.3.2) and take advantage of the window of opportunity (Section 4.4).

Importantly, the study also indicates that demands for greater effectiveness from leaders are accompanied by the formation of somewhat independent centers of power in the SES. Regional governance bodies are being created to supplement NAWE in vertical collaboration with external actors. The polycentric governance model emerging from these developments might enhance chances for successful implementation of ACM by introducing institutional redundancy into the system (Dietz et al., 2003; Charles, 2007; Section 2.5.2). However, for such polycentricism and decentralization to be effective, there has to be a commonality of values and perceptions at the level of the nationality (Shackleton and Campbell, 2001; Section 2.6.3). Therefore, the addressed earlier differences in the levels of social capital among the Waodani communities could undermine the benefits of the emerging polycentrism.

In this context, it becomes crucial to assess whether other conditions for ACM - apart from social capital - are also unequally met across the Waodani nationality. Evaluating the importance of the resource and the perception of the resource problem could assist in this. Again, however, as in the case of social capital, the analysis reveals a complicated picture. On one hand, as a cultural heritage, the forest is equally valued in Kiwado, Guiyedo, and Batabudo. It is also valued as a source of livelihood, but mostly in Kiwado rather than in Guiyedo and Batabudo, due to the latter's greater linkages to markets and other sources of goods.

These differences in the type of attachment to the resource have, in turn, impacted on the perception of the resource problem, which again points to linkages among the selected ACM conditions. The perception of the problem is greater in Kiwado, since the community's residents' continued dependence on the forest resources makes them more alert to changes in their availability. This, in turn, provides a greater motivational drive for the collective action evident in the community's independently-generated conservation initiatives. In Guiyedo and Batabudo, on the other hand, access to external sources of *abundancia* allows local Waodani to have their daily needs externally met, which lessens the perception of any resource problem, in the same way it lessened the need for strong social capital in these two communities. Again, these inter-community differences are ill-fitted to the constitutional changes associated with the window of opportunity that, by definitions, would have to apply equally across the nationality (4.4.1). These differences are also problematic in the context of multi-level collaboration within the Waodani SES. Such collaboration has to be broadly inclusive and done at the level of the nationality as a whole to avoid an accusation that NGOs' are choosing 'winners and losers' and, indirectly, fueling inter-community divisions and antagonism.

Still, on a more positive note, the very notion of collaboration is equally embraced by the Waodani communities. In this respect, the concept of *abundancia* or the forever-giving forest and these hunters and gatherers' drive to find new sources of livelihood could become an advantage for forging multi-level collaboration and promoting alternative livelihood projects such as Socio Bosque. However, as in other cases, a thorough analysis of the data reveals a less straightforward picture. The Waodani's enthusiasm for participating in any projects or collaborative effort comes with their lack of selectiveness and a tendency to switch loyalties and abandon already implemented initiatives for something else that comes along.

In effect, the cultural script affects the Waodani in two ways. It makes them eager to jump into a collaborative initiative but just as eager to abandon this initiative for a different one, possibly less sustainable). In the context of the lengthy nature of ACM, such behavior could present a stumbling block to establishing foundation for adaptive governance. It could also, in more immediate terms, affect Waodani's participation in the 20-year Socio Bosque project. On the positive side, however, some willingness to persist through projects and 'work hard' has begun to manifest itself among the younger Waodani, which could eventually help in addressing SES's challenges through adaptive governance.

Furthermore, a tentative hope for fostering adaptive governance as a prerequisite for ACM also comes from the analysis of openness for education and accepting rules and sanctions. The Waodani increasingly see their deficiencies in these areas and appear ready for change. In both cases, as in regards to leadership and multi-level collaboration, these are young people who are most pro-active. Firstly, younger Waodani are participating in management training and other capacity building opportunities, which should eventually lead to the emergence of better local and national leaders. These new young leaders could help to instill collective action across the nationality, raise awareness of the resource problem, and emerge as a more committed partner in the polycentric structure of the SES. Younger Waodani are also more open to rules and sanctions and their efforts have already resulted in mapping and zoning projects as well as in implementation of the statutes.

Overall therefore, it is possible that, in the future, a number of the ACM conditions could be better addressed by younger and more pro-active Waodani. Still, achieving this goal is not certain. The Waodani's continuing dependence on the oil industry and their increasing exposure to the markets (Section 4.3) could undermine their readiness to deal with the most pressing social-ecological problems in a collaborative and adaptive way. In the long-term, therefore, the SES's ability to transition towards adaptive governance is tied to the forest and its resources remaining vital for the Waodani's daily livelihood.

CHAPTER 8

THE ROLE AND IMPACTS OF EXTERNAL ACTORS IN FACILITATING FUTURE IMPLEMENTATION OF ACM IN THE WAODANI SES

8.1 INTRODUCTION

Non-governmental organizations (NGOs) operating in the Waodani SES could play a crucial role in helping the indigenous communities build their adaptive capacity. NGOs can provide these communities with opportunities for collective learning and create a platform for trust-building and conflict resolution. In addition, they can act as bridging organizations between these communities and all external actors (Huq and Reid, 2007, Allen and Gunderson, 2011). However, NGOs' practices and actions can also constrain the adaptive capacity of the communities with which they are working (See Section 2.6.6). This is why an analysis of factors that determine the level of cross-scale interactions and the creation of a space for collective learning and experimentation is necessary.

Similarly, the role of the Ecuadorian State is crucial in considering any future ACM initiative. An important window of opportunity has become available to the Waodani nationality with the new legislative changes introduced in 2008 (Section 4.4). On the surface, the recent political and legislative shift appears congruent with the spirit of ACM because it strives to decrease power discrepancies between collaborating partners as well as create a platform and a motivational context for a multi-actor participation and collaboration (Folke et al., 2005; Plummer et al., 2012). Still, as argued in Section 4.5, it is important to examine whether the recently announced changes can really facilitate transitioning towards adaptive governance in the Waodani SES.

8.2 THE STRUCTURE AND PURPOSE OF THE CHAPTER

In this chapter, NGOs' and the Ecuadorian State's readiness for the implementation of ACM in the Waodani SES will be analyzed in two separate sections. The analysis follows the sub-categories or themes that emerged from the focus groups and individual interviews and are listed in Section 6.4.3. Its overall purpose is to answer the two research questions related to the external actors (Section 6.4.3), namely:

- How do NGOs affect chances for future consideration of ACM in the Waodani SES?
- How does the Ecuadorian State affect chances for future consideration of ACM in the Waodani SES?

Answers to these two questions are provided at the end of each of the two sections.

8.3 THE ROLE OF NGOS' IN THE POTENTIAL IMPLEMENTATION OF ACM IN THE WAODANI SES

8.3.1 Perceptions and values

The level of trust towards the Waodani

The level of mutual trust between different actors during the implementation of ACM is one indicator of the potential for success. Trust facilitates multi-actor collaboration by generating good faith and a sense of understanding among partners (Putnam, 1995; Rist, et al., 2013). As Kendrick (2003) indicates, trust plays a key role in creating spaces for innovation and mutual learning that are essential to ACM. Without trust “joint management can mask multiple perspectives rather than benefit from the opportunities they offer for collective and innovative learning” (Kendrick, 2003: 44). A significant level of trust becomes even more indispensable when ACM is being considered in indigenous societies. Different epistemologies governing the western and indigenous cultural contexts can present an additional stumbling block to achieving mutual appreciation and understanding (Kendrick, 2003).

What often came up during interviews with NGO employees was their lack of trust towards the Waodani and their organizational bodies. For instance, NAWE's pervasive corruption and lack of commitment to working for the benefit of Waodani communities led some NGO representatives from FEPP and WCS to question the possibility of effective collaboration with the organization:

In the end, NAWE is characterized by years of corruption and it only creates a space for individuals and their families to focus on their own personal interests. They don't really care about the rest of the nationality (NGO Representative, #8).

You simply just can't trust NAWE. They never accomplish anything they promise and only search for ways to get money from whoever they can. Once they get money they just use it for their own benefits (NGO Representative #3).

Furthermore, NAWE's management performance affects NGOs' views about other Waodani and inclines them to be pessimistic about the benefits of collaborating with the nationality as a whole:

Some people or organizations come to work with the Waodani and they all have great ideas on how to improve their lives and teach them how to manage their territory. After a while, however, they just get tired and give up. They have no patience to deal with the Waodani's unpredictable or inconsistent behavior and their lack of commitment (NGO Representative, #5).

The corruption among NAWE leaders is recognized as one of the governance barriers that prevents the Waodani from escaping the poverty trap they are caught in (see Section 4.3.2.1). This corruption and the difficulty of working with the Waodani because of their unpredictability and lack of consistency make it challenging for local NGOs to demonstrate to their donors the effectiveness of their activities in the SES. Because of funding constraints and pressures under which NGOs operate (Ebrahim, 2003; Ostrom, 2005; Molly, 2012, Section 2.6.6), the frustration of working in an unpredictable cultural context can quickly set in:

NAWE spends million and millions of dollars and they have never done anything for improving lives of their people.. They just can't be trusted. It is so discouraging because you often feel that your work with them is being wasted. How can you sustain a project and your motivation to overcome all the obstacles, and how can you explain to donors that the project they fund leads to some real change on the ground? (NGO Representative, #8).

Waadani are a very difficult nationality to work with because of their internally unstable politics and well-known corruption. This might be the reason that some organizations and donors simply don't want to get involved with this nationality and do not want to feel that their funding is simply thrown away (NGO Representative, #13).

A belief that any collaborative efforts in the SES will be inherently difficult, hard to measure, and prone to being squandered could affect the motivational drive and attitudes of NGO representatives. Under the donor's "favor[ing] 'product' data over 'process' data" (Ebrahim, 2003: 78), defeatist attitudes and limited expectations emerge, which can lead to undermining trust-building efforts and thwarting any potential ACM initiative. My own experiences within the Waodani SES also point to tangible consequences of the lack of trust. An insufficient trust in partnership efforts can lead, for instance, to withdrawing funding already allocated and to the cessation of projects, as was the case with IBIS involvement in the SES (see Section 4.3.2.1):

Moi³¹ organized his Assembly in Kewediono to change the president of NAWE. It was an illegal assembly and after this IBIS decided to withdraw from helping NAWE (NGO Representative #7).

Furthermore, in the case of large NGOs and their donor institutions, the lack of trust towards the Waodani and, especially, their leadership structures, can severely undermine the level of collaborative efforts in the SES as a whole. For instance, NAWE's wastefulness and corruption were a frequent concern for USAID which for a number of years provided a major part of funding for institutional strengthening, capacity building, and community-based projects in the SES (Section 4.4.3). When, after the sudden change in NAWE leadership described in Section 4.3.2.1, all computers and office equipment were stolen, USAID expressed reservations about continuing its funding of WCS's work in the SES (pers. obs.).

Unfortunately, once such a sense of futility sets in, it becomes difficult to overcome. As a result, in recent years USAID's involvement in the Waodani communities became increasingly limited, leading to the eventual withdrawal of this major funder from the Yasuni landscape. One of the reasons behind USAID's withdrawal was skepticism about ever achieving measurable progress in enhancing socio-ecological well-being of individual communities through multi-level collaboration with the Waodani

³¹ Moi Enomenga, a world known Waodani leader about whom Kane (1995) wrote a book. In 2011, he received the National Geographic Society/Bufett Award for Leadership in Conservation. In July 2013, he was elected the president of NAWE.

nationality and its leadership (pers. obs). This is a particularly disheartening situation, because, as argued in Section 7.2.2.2, many ordinary Waodani are also tired of NAWÉ's wastefulness and corruption. In essence, therefore, to a degree, views of many Waodani themselves and external actors converge. Still, regardless of this, it might be hard for external actors to appreciate this reality, since they tend to perceive the whole nationality through the prism of its corrupt leadership.

The lack of trust and the defeatist attitudes of individual NGO employees and their funders can exacerbate the climate of powerlessness among the all participating actors in regards to fulfilling their different objectives in the Waodani SES. This is again unfortunate scenario, especially in an indigenous context. As argued in Section 2.6.2.1, working with indigenous societies is challenging because two very different worldviews and epistemologies are placed next to each other (Kofinas, 2005; Stevenson, 2004; 2006). A high level of motivation and a strong belief in accomplishing objectives that each side has when entering collaboration are thus needed to overcome this inherent challenge. A sense of mutual trust and a belief that successful collaboration can eventually be achieved are necessary qualities, and they need to be nourished and supported (Plummer and Armitage, 2007a).

This is the reason why NGOs' preparation and their prior knowledge of the Waodani are so important. As in daily human relations of any kind, mutual trust comes from our understanding of other people and from being certain that they understand us. Becoming involved with an indigenous group such as the Waodani without having any prior awareness about potential challenges goes against the spirit of cross-cultural understanding that should drive collaborative processes in traditional societies (Harding, 2007; Pace, 2009). The failure of some NGOs to live up to these challenges was noted during individual interviews:

Some organizations come here and they have wonderful ideas on how to reduce hunting, how to organize the lives of the Waodani and their communities. However, they show up out of nowhere because they happened to have some short-term funding to work on specific management problems in the Yasuni [...] but they don't know the region's reality, don't understand the Waodani communities or their organizational dynamics. As a result, after a while of trying to do something, their strategies simply don't work. Their funding ends or they simply just get frustrated, and then they are gone as quickly as they showed up without changing or improving anything in the region. On the contrary, often they just generate conflicts and additional tensions within the nationality or with other organizations working here in the Amazon (NGO Representative, #3).

The fact that some of the external actors "just get tired and give up" brings back the issue of social responsibility. It is imperative for NGOs to realize the complexity of the Waodani socio-cultural context before any projects are initiated, especially co-management projects that are inherently lengthy in nature (Ostrom, 2005; Armitage, 2007). Premature ending of co-management projects - due to lack of trust or belief in their eventual success - presents an ethical dilemma of raising and then

squashing hopes of local people. Once a project is prematurely-terminated, all earlier efforts might seem wasted to indigenous people, engendering a sense of futility and distrustfulness, which, in turn, can render any future ACM initiatives even more difficult to initiate.

It needs to be acknowledged, however, that the lack of trust towards the Waodani and skepticism about achieving successful collaboration with them are not uniformly shared among all NGOs operating in the area. Some of the findings also point to a conscious attempt on part of selected NGO employees working in the SES for such organizations as FAO or WCS to persist and eventually overcome the Waodani's organizational and cultural challenges:

You need a long-term commitment to NAWE and the Waodani communities. Putting it all on one leadership and hope that things will work out is not real and you need to work through all the difficulties, changes, disappointments, and frustrations (NGO Representative, #12).

Our main goal is to work with, for the Waodani people, and not with a particular Waodani interest group. There always have been and will be ups and downs, and changes, so it is important to persist through it all (NGO Representative, #7)

In themselves, these views are indicative of a measured trust towards the Waodani people and a belief that successful collaboration can be achieved in the long-term. The phrase, “*long-term*”, becomes operative here. There is a growing awareness among some NGO representatives that successful co-management is, indeed, possible. It can only be achieved, however, after a long-presence in the communities. Such an extended presence involves working with constantly changing leadership regimes and across various power structures that have an impact on the socio-ecological wellbeing of the SES. In other words, “*persisting through it all*”. An acknowledgement of these facts could constitute, in itself, an important contribution to the success of any future ACM projects. It demonstrates a predisposition among some NGO employees to view building trust as a goal that evolves over an extended period of time and which is achievable in the end, despite temporary difficulties and setbacks.

Furthermore, apart from the general statements, some NGO representatives offered examples of on-the-ground projects that had been built on the notion of trust as both an engine for and a fruit of a long-term collaboration:

With the regard to the technical team, we helped NAWE to identify young Waodani that would be part of the team, we trained them and then stayed working with them. Our idea was to promote the persistence of the technical team in spite of frequent Waodani political changes to ensure the continuity of the territorial processes we initiated. We were trying to do the same with the NAWE administrative personnel. It was more than a commitment to individuals, as much as we would like to work with Pedro³², Manuela³³, our goal has always been to give a continuity of our work with

³² Pedro Enqueri was the NAWE president between 2009 and 2012

the NAWE organization and nationality as a whole. It has been the only correct way to work with the Waodani (NGO Representative, #7).

This statement comes from one of WCS employees; an organization that has the longest and the most diversified working experience with the Waodani. As already stated, WCS is also likely to remain a part of the Yasuni Biosphere's management landscape for a foreseeable future (Section 4.4.3). In light of these facts, this NGO's employees' commitment to a long-term collaboration with the Waodani offers hope in the context of the future implementation of ACM in the communities.

Moreover, excerpts from the focus groups with the Waodani people and from the interviews with their leaders also show appreciation of WCS's long-lasting efforts in the communities:

WCS has been with us for a long time [...] helping us with the projects and teaching us how to monitor our land and use GPS (Participant #2.4, Guiyedo /Timpoka).

We have a long history with WCS, and they are in Puyo and in the communities. Thanks to working with WCS, we have the Socio Bosque program and we have trained technicians. We did not have this before, but now we see our nationality getting better prepared and organized (Waodani Leader, #1).

It is thus evident that trust expressed by external actors towards the Waodani can be reciprocated by the indigenous people. As should be expected, displaying positive attitudes is, in itself, as a recipe for engendering these attitudes on the other side of the partnership equation. If reinforced and nurtured, these attitudes could become more prevalent, enhancing thus chances for successful ACM initiatives in the SES. At the same time, however, the issue of the veracity of the Waodani's statements arises. Since, as already noted, the Waodani are prone to telling outsiders what they think these outsiders want to hear, the statements' praising WCS have to be taken cautiously in the context of my being an employee of the NGO at the time of data collection.

8.3.2 Collaborative processes in relation to the Waodani

Creating space for participation and collaboration

As argued earlier, trust-building should be a conscious effort. It needs to be promoted through creating spaces for participation and collaboration. It is thus important to evaluate whether collaborative processes that lie at the heart of ACM have been established between NGOs and the Waodani. These processes rely on broad stakeholder participation and collaborative initiatives that foster capacity to manage resilience. Collaboration implies allowing different partners to contribute and bring different perspectives to dealing with challenges at hand (Djalante et al., 2011; Plummer et al., 2012, 2013; Section 2.5.2).

³³ Manuela Oma Ima has been the president of AMWAE since 2005

Some NGO representatives participating in the study pointed to a tendency of external actors to exclude the Waodani from specific projects carried out in their communities. The Waodani's tenuous relationship with the Yasuni Research station exemplifies this tendency:

The relationship between the Yasuni Research Station³⁴ and the Waodani has not developed despite many years of this station being in close proximity to Waodani communities...so many students are doing their research there and the Waodani are only hired for manual work: cutting bush or climbing trees. The Yasuni Station has never involved them, meaningfully, in any projects (NGO Representative, #2).

Indeed, in a broader sense, the Waodani are often seen as a peripheral presence in the SES. If they are not outright disregarded, they often become an object to study and research upon:

Often people from outside come here, do different things, talk to people in the community or collect plants [...] but we don't know what this is for and have nothing from this. They never involve us in anything and then they are gone (Participant #1.3, Guiyedo/Timpoka).

So many people come here to do their work, to talk to us. They ask us questions, but usually we do not know what they are doing. They collect information about our culture, take photos and talk mostly to elders. However, there is no benefit for the community from all these visits (Participant #2.4, Guiyedo/Timpoka).

NGO employee's remarks and the Waodani's complaint that "they never involve us" point to the external disregard of the concept of a collaborative space where knowledge exchange can take place. On the other hand, the comment that outsiders "collect information about our culture, take photos and talk mostly to elders" relates to McGregor's (2009) concern that indigenous people are often becoming the 'objects' of study and to Wilks's (1996) view that traditional societies are frequently treated as 'guinea pigs'.

NGOs' disregard of the Waodani and their failure to create space for participation, collaboration, and knowledge exchange were also noted by one of the researchers from the Yasuni Research Station:

Researchers come here and their interest is to optimize data collection within the shortest time possible. They come to the Station to conduct their research and publish their articles. This is what it is. They do not come here to work with the Waodani and we can't blame them for this because they come here not to help the communities but to help science (NGO Representative, #1).

Withholding information or not sharing it fully with local communities undermines trust and collaboration processes and, as a result, adaptive capacity of the SES (Armitage, 2007). Importantly,

³⁴ The Yasuni Research Station (Estación Científica Yasuní) is located in the Yasuni National Park in proximity to the Waodani communities of Guiyedo and Timpoka. It constitutes a part of the School of Biology of the Pontificia Universidad Católica del Ecuador (PUCE).

even though the concerns presented in the transcript appear to be more representative of attitudes among individual researchers rather than of attitudes prevalent among employees of large international NGOs, they might still have broader repercussions in terms of hindering ACM in the SES. Judging by my own experiences, it is difficult for individual Waodani to clearly differentiate among all external players operating in their territories. For example, during a meeting in Toñampade devoted to updating statutes, many Waodani complained about outsiders coming to their communities to conduct various activities, but not involving them and not sharing findings with anybody. The notion of being “an outsider” was very generic and could apply to all external actors. It was also confirmed by focus group participants from Guiyedo and Timpoka:

We feel like we are taken advantage of, because people, all the people who come here, they just take information about us (Participant #2.4, Guiyedo /Timpoka).

In reality, therefore, the Waodani’s antagonism against a certain institution or an individual unaffiliated researcher can be easily re-directed towards other people and organizations working with them. A guilt by association sets in. In the end, local populations can become disenchanted with the idea of participating in co-management efforts with any external actors, regardless of these actors’ sincerity.

On the positive side, as in the case of trust-building, there are some indications that a number of NGOs’ representatives currently operating in the SES are becoming more aware of the need to involve local Waodani in their activities and thus create space for participation and collaboration:

The goal of our project was to reduce the levels of bush meat hunting and meat commercialization within the Yasuni National Park and the Waodani territory. One aspect of the project involved direct work with the communities to help them in search for economic alternatives that could substitute the incomes they are getting from the illegal hunting and commercialization of bush meat. As a result, first, we applied the participative framework and promoted the process of dialogue and consultation with the communities to identify their interests about a type of economic alternatives they want to get involved in. At the end, on a basis of meetings and workshops, we proposed to support them with improving their food production system through the use of their traditional chacras with products that have market value (NGO Representative, #5).

Our goal as the organization is conservation of wild places and wildlife, and the Yasuni areas was selected as one of our focus landscapes because it represents the last wild place in the world. However, working and conserving wild places requires close collaboration with people who live there. Without them any conservation effort wouldn’t be successful. Consequently, any activity within the Yasuni landscape was undertaken in a close relation and consultation with its inhabitants [...]. Our conservation efforts would not be effective if local people were opposed to it or did not constitute a part of what we are doing. Neither military nor police can help to protect the areas if local people oppose conservation (NGO Representative, #7).

My own experiences also suggest that some of the specific problems related to creating spaces for knowledge sharing (as identified in the first part of this section) are finally being addressed. For instance, the relationship between the Yasuni Research Station (YRS) run by the University of Catolica and the Waodani communities has improved recently. With the change of director of the Station in 2012, much closer relations between these two groups have begun to form. The new director recognizes a need for collaboration and exchanging information with the indigenous people. During one of the meetings between YRS representative and MAE, in which I participated as a representative of WCS, the new station director and other participants talked about the past exclusion of the Waodani from YRS's work. At the end of the discussion, they committed themselves to much closer collaboration with the communities of Guiyedo and Timpoka. YRS's director openly stressed how important it was to create spaces for a dialogue with the Waodani (Section 3.2.1; pers. obs.). Still, it needs to be seen if these views will be followed by any real and sustained action. Furthermore, the emerging collaborative tendencies do not invalidate the challenges addressed earlier. They offer hope, however, that with more mutual-learning and right leadership changes on the part of NGOs, the obstacles undermining the creation of spaces for collaboration will be overcome.

Collaborating with the leadership structure of the Waodani

Respecting various indigenous leadership structures and social groups is necessary to provide co-management efforts with sufficient levels of legitimacy. As argued in Section 7.2.2.2, this might be especially crucial in societies such as the Waodani, because of their egalitarian tendencies and their inherent suspicion of external interference (Robarchek and Robarchek, 1992).

An analysis of the focus group discussions and individual interviews points to a different kind of disregard of the Waodani as an actor in the SES. In this case, the indigenous people are not entirely precluded from participation in projects. Instead, their central organization, NAWA, is by-passed by NGOs which prefer working with local Waodani:

We work in the specific area of the Waodani territory, not with NAWA but directly with the communities. We wanted to work on the local level and not on the level of nationality because it implies different processes. In order to work at the macro level, one must work in the political context and at this level, there are just too many personal interests that are not consistent in any way with interests on the local level (NGO Representative, #6).

Such reluctance of some NGOs' representatives to work with the central leadership of the Waodani nationality was identified as one of the problems inhibiting co-management efforts in the SES:

There are organizations or individuals that just work directly with communities and disregard the whole leadership structure of the Waodani. This can be the cause, I think, of internal conflicts among communities as well as among communities and NAWA itself (NGO Representative, #11).

Fundacion Natura decided to work with communities through AMWAE, since it was easier to get to the Waodani through women's organization than through NAWE. They disregarded the structure and leadership of the Waodani nationality, and only after some pressure from other organizations they finally reported the project to NAWE. However, this was not a correct way to start a working relationship with the Waodani (NGO Representative, #10).

We have many problems with [person x], she comes here only to work with Penti³⁵ and then she says that she represents all the Waodani. But she does not come and talk to us and she talks in our name, in the name of the Waodani. This is not good and we do not accept it (Waodani Leader #8).

Bypassing the Waodani's political structures presents a challenge to promoting ACM within the region. Firstly, in terms of adaptive capacity which underpins ACM, disregarding a legitimate source of power in the SES is counter-productive. As Armitage (2007: 69) argues, adaptive capacity depends partly on understanding "existing and evolving power relationships among different groups". In other words, any external actor entering the Waodani SES needs to become familiarized with and appreciative of power relations governing socio-political structures of the system.

Admittedly, this is a controversial and difficult issue because, as argued in Section 7.2.2.2, the Waodani themselves are discontented with NAWE's corruption, ineffectiveness, and mismanagement of resources. In essence, therefore, some external actors' rejection of NAWE could be seen as a sign of solidarity on the grass-root level with the Waodani nationality. Still, it remains questionable whether external players have the right to exacerbate the internal polarization within the nationality. Rightly or wrongly and however imperfect, NAWE remains the only central leadership body in the Waodani world that is invested with some level of legitimacy. As argued by Plummer et al. (2012), striving for legitimacy and paying attention to local power structures are critical to facilitating co-management (Plummer et al., 2012).

Furthermore, the exclusion of NAWE as a partner in co-management activities taking place in the SES goes against the idea of promoting polycentric institutional arrangements that support management diversity (Dietz et al., 2003; Folke et al., 2005). Since NAWE represents one more layer in the polycentric management framework of the Waodani SES, including it in multi-level collaboration can expand co-management options and safeguard the SES from the implementation of a unilateral vision.

Finally, the disregard of NAWE could weaken the Waodani's negotiating position in future co-management efforts with the State and other external actors. As explained in Section 4.3.2, the Waodani have been, historically, an egalitarian society (Robarchek and Robarchek, 1998). Adhering

³⁵ Penti is the leader of the Waodani community of Bameno in the ZITT

to these cultural features has made it difficult for the Waodani to present a unified front to challenges, especially those brought on by oil exploration in the territories. Divided by individual interests, the Waodani became an easy prey when dealing with various outsiders, as the history of the early post-contact period indicates (Yost, 1981; Narváez, 1996). That is why, as Ziegler-Otero (2004) argues, the formation of ONHAE - the predecessor of NAWÉ - prevented oil companies from playing one community against another and gave the Waodani people some power in deciding their destiny. In this context, the idea of a central leadership not only ensures the existence of an identifiable negotiating partner on the Waodani side but also gives hope for strengthening horizontal linkages by coalescing the Waodani around common goals. A more focused vision and closer linkages on the level of the nationality can, in turn, give rise to collective action that is needed for co-management (Ostrom, 2005).

The disregard of NAWÉ by NGOs can also exacerbate conflicts between NAWÉ and individual communities. NAWÉ leaders can feel resentful for having been overlooked - despite their statutory powers - and can blame local communities for this. For instance, the external actors' interest in and support of the Waodani's women's organization, AMWAE, has been met with some resentment by NAWÉ leaders (pers.obs.). Additionally, the fact that only some communities are being selected to benefit from externally-funded projects might create antagonism and a sense of jealousy in those communities that had been neglected by NGOs or individual researchers working in the SES:

Others receive so much help from everybody, you have people working with the community and they have tourism. They receive a lot of money from outside and here nobody helps us (Participant #1.1, Kiwado).

All these problems have been noticed and criticized by the Waodani leaders, which, in itself, gives proof of their counter-productive impact on fostering a wide-ranging collaboration in the SES. In a direct response to the identified challenges, the most current version of the Waodani's statutes stipulates that external actors must obtain permission from NAWÉ prior to their involvement with individual communities.

... los Investigadores, estudiantes y otros, que requieran levantar información de relativa a la nacionalidad requerirán autorización de la N.A.W.E y del Presidente de la comuna del lugar de la investigación/ The researchers, students and others that want to collect the information about the nationality need an authorization of N.A.W.E. and the president of the community in which this research will take place (translated by M.B.) (NAWÉ 2011b, Art 6.9.g)

The very need for the inclusion of this stipulation in the updated version of the statutes is indicative of the problem and its persistence.

Still, some of the statements collected from current NGO representatives indicate a growing recognition of a necessity to include this leadership body in collaboration, in spite of its checkered past and current deficiencies:

Any project and work with the nationality should be carried out at three levels: organization, communities, and families. These three levels always have to be present in any planned initiative with this indigenous group. Of course, someone might not agree with the Waodani organizational vision or politics, but you can't leave them out because you create internal conflicts as other organizations have done before. (NGO Representative, #11).

I do not agree that we should work only with communities. If you want to strengthen the nationality, you have to prepare the strategy on different organizational levels. If you work only with a community or family you are dividing the nationality. Obviously you have to have different strategies for each level, but it is very important. We are realizing that sometimes past approaches to work with one family or community just led to internal polarizations (NGO Representative, #10).

These statements reflect a learning process of part of NGOs. Some NGOs' employees are trying to address issues such as, for example, 'internal polarizations' that dogged multi-scale collaborative efforts in the past (Ziegler-Otero, 2004; Aviles, 2008). Since these statements were uttered by the representatives of NGOs that are currently working in the Waodani territories, they can serve as an indicator of how multi-scale relationships might be shaped in the near future. For instance, one of WCS employees was emphatic about respecting the Waodani's hierarchical organization structure in implementing community-based projects:

Our main approach was to work directly with Waodani representative organization of NAWÉ on the activities related to the territorial management. We assumed that working with and through the central organization was an important strategy to work with the nationality as opposed to working only with individual communities (NGO Representative #7).

Overall, WCS's approach to working in the SES encompasses a direct collaboration with local communities as well as respecting the legitimacy of NAWÉ as a central leadership structure of the nationality. One of the goals behind the multi-level collaboration promoted by WCS is fostering linkages between communities and NAWÉ and thus strengthening the organization's position and recognition among the Waodani. WCS has trained, for example, locally-selected mapping technicians who would - under the supervision of NAWÉ - lead the processes of territorial mapping and plan activities with communities. In this scenario, WCS would limit its role to providing technical support during negotiations between NAWÉ technicians and community members:

For us, it was important to have technical activities accompanying the process of institutional strengthening. This way we could give more substance to the project. The formation of a technical team associated with NAWÉ that is getting out and doing boundary demarcations or doing local community mapping means that there is the presence of NAWÉ in the communities and that NAWÉ is doing something for its people. I consider it an important benefit of our work with the Waodani because nothing like this has existed before. We made a decision about working both with the organization and directly with communities. It was a challenge trying to work on these two levels and trying to be effective. By strengthening the nationality's governance system and its technical capacities, we believed we could bring people,

communities and organizations together so they could present their visions and ideas as the nationality and not only as individuals (NGO Representative, #7).

What is more, the success of WCS's efforts was possible without interfering in the Waodani complex political context, contradicting thus one of the earlier statements that *"to work at the macro level involves working in the political context"*:

We tried to stay away from political aspects of the nationality. We have agreement with NAWA that is valid independently of the president and his governing council. The idea was to have a technical coordinator who, on a daily basis, would serve as an advisor to the organization as a whole and not directly to the president himself. We were able to maintain this person despite frequent changes in the NAWA leadership. Main reason behind the success of our relation with NAWA was that we gave the organization the technical and administrative continuity and each leadership appreciated the role our technical coordinator played in strengthening their institutional and technical aspects. As a result, despite working with the nationality through several different presidents we can see that our efforts made a difference (NGO Representative, #7).

Overall, therefore, it has to be acknowledged that many employees of organizations currently operating in the SES - especially WCS - are sensitive to the need of incorporating NAWA in the implementation and planning of community-based projects. They are supportive of enhancing the SES's adaptive capacity through broadening management diversity, which, after all, is one of defenses that any SES has in facing an uncertain future (Folke et al., 2005; Charles, 2007). Still, as in other instances, it needs to be acknowledged that - when I was interviewing external actors - I was still employed by WCS. Therefore, there is a possibility that some of the participants might have been influenced by this fact in answering questions and expressing their views.

Mutual learning and genuine incorporation of the Waodani's input

A thorough understanding of the processes of knowledge exchange and mutual learning demands assessing whether any consultations and exchanges of information translate into "bringing of a plurality of knowledge sources and types together" (Armitage et al., 2011: 996). This is necessary because including a variety of partners in management activities does not automatically signify that the input and ideas that these partners put forward will be appreciated and included in all stages of decision-making.

A failure to incorporate the Waodani's input was one of the co-management concerns addressed during the focus groups and individual interviews. One of the governmental employees described a case where the Waodani's contribution was clearly neglected, despite creating a space for participation and the inclusion of indigenous people in co-management efforts:

The co-operation with Waodani was based on their [EcoCiencia³⁶] priorities and necessities. They invited communities and NAWE leaders, but they did not allow them to make decisions on their own. This is a 'technocratic' approach and this is not the way to do things. Each external organization has its methodology and then one technician contracted from outside comes and applies this methodology to develop a community management plan and defines what resources they can use, how, and where. He defines what projects would be suitable for the Waodani and how they should manage them. One suits all. Of course, you see participative meetings, a lot of conversations with the Waodani, and you think that things are being developed together [...] but it is not how it comes out in the end. The technician just does not allow the community to have things done in a different way that he has already planned. The problem is that the nationality does not have the capacity to write what they think on their own, so they depend on outside help and in the end their ideas are never included in the final project document (Government Representative, #16).

In cases like this one, the Waodani are not explicitly excluded from participating in collaborative processes with NGOs - the problem that was discussed in the first part of section 8.3.2 - but, instead, their input and vision are still not sufficiently considered. Therefore, despite an apparent inclusion of the Waodani in management, the approach presented here undermines the spirit of mutual learning and allies itself, instead, with a singular vision of centralized management (Berkes et. al., 2003). Consequently, as in the case of the outright exclusion of the Waodani, the end result contradicts the idea of nurturing diversity for resilience (Folke et al., 2005).

The roots of the problem lie, partially, in a patronizing or romanticized approach to the Waodani people. The Waodani's prolonged battles with the oil industry and the image of 'David versus Goliath' struggle (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001) might have been used by external actors, such as NGOs, to obtain international funding. In the process, an overly romanticized vision of the Waodani might have been formed. This vision has led, in turn, to the creation of stereotypes which could be responsible for instilling NGOs' patronizing or even condescending approach in their direct collaborative efforts with the Waodani:

We are being romantic about them; we see them as warriors. In a way, we look down on them and think that they need to be led by hand. We often treat them like children (NGO Representative, #12).

When we talk about converting them into agriculturalists, we say, well, they can't do it, because they have never been doing it and we should protect them from any drastic changes that may disrupt their culture and the old way of living (NGO Representative, #5).

Sometimes organizations come with recipes to rescue the Waodani culture and they have clear ideas about a project and how they want to work with the Waodani. They help them step by step to go through the process they consider crucial and give them

³⁶ EcoCiencia (Ecuadorian Foundation for Ecological Studies) is a local NGO that works in the field of conservation of biodiversity and community development. Although, it does not have a permanent presence in the Waodani SES, it leads the process of the development of the Waodani's first territorial management plan.

anything they need. [...] but they are not giving them any responsibilities, because, as they say, they are not ready yet. It is wrong (Government Representative, #16).

As argued in Section 2.6.5.1, one of the problems affecting collaboration between Westerners and indigenous people is a tendency to look at the latter as frozen in time (Harding, 2005). In the Western perception, indigenous people “are unchanging - and forbidden to change” Pace (2009: 3). Although well-intended, an overtly romantic and stereotypical view of the Waodani can undermine effectiveness of adaptive co-management initiatives which depend on adaptation and iterative learning of all actors (Armitage et al., 2007). Therefore, it is possible that by using the Waodani’s cultural uniqueness as an excuse to expect less from them, external actors might prevent collaboration from reaching its full participatory potential.

Finally, even if it is well intended, protecting the Waodani from a full involvement in co-management projects through the imposition of external concepts devalues indigenous knowledge and keeps local people in a dependency mode, which, as argued in Section 4.3.2.1, has largely contributed to the poverty trap. Apart from its socio-cultural inappropriateness, this approach renders the Waodani ill-prepared for the profound reorganization facing their SES. Due to the legal and constitutional changes discussed in Section 4.4, the Waodani will have to let go of their culture of dependence and become more pro-active in managing their resources. Therefore, not demanding any changes from them or insulating them from active participation in solving challenges facing their SES might be detrimental to the nationality in the long-term.

It needs to be noted, however, that similar to the aspects addressed earlier in this section, the negatives related to NGOs’ efforts in the SES are partly counterbalanced by some positives. In the present case, apart from revealing challenges, the findings also demonstrate that a number of current NGOs employees are growing more appreciative of the indigenous culture and they recognize the need to fully incorporate indigenous knowledge and input in any co-management efforts:

The Waodani are the ones that shape their own future or how they want to organize themselves. We work with them and suggest things once they need it. It is important to accompany them and this is why we are here, but at the same time we always respect their position and how they want to carry out processes (NGO Representative, #10).

It is important to work with the Waodani in a manner that does not alter who they are and change them to the degree that they would abandon their culture. The cacao production needs to be done on Waodani’s term, without changing their cultural dynamics. But this is what they want, and we, as the organization, only guide them through the technical process we are familiar with (NGO Representative, #5).

To understand the Waodani’s view of the world is very important and we are more than obliged to actively increase our knowledge about who they are, their culture, their views. Of course, now their lives have changed drastically with the oil development and the presence of the markets. This is where we can play an important

part in helping Waodani to go through the transition without losing their identity. Their views, way of living, their concept of forest and animals should be part of any projects and initiatives undertaken with this group. Learning from them, understanding their culture, all this is a significant component in what we do (NGO Representative, #9).

Some of the NGOs working in the region demonstrated their openness to the true incorporation of indigenous knowledge and perspectives by engaging in experimentation and dynamic learning which lie at the heart of ACM (Berkes, 2007). A number of excerpts from the interviews shows how some NGO representatives are willing to re-evaluate previous premises, ideas, and priorities as the result of their daily collaboration with the Waodani people:

This is a young society in terms of its relation with the Western world and there isn't a recipe for working with Waodani; what is important is that you learn things about them through projects, as you go, and adapt, change, and provide recommendations. Working with the Waodani involves a constant learning process since they are one of the most dynamic groups I know (NGO Representative #12).

You come with one idea to work with the Waodani, but it somehow changes on the way once it is being implemented, because you learn that certain things just do not work with them and you have to adjust (NGO Representative #6).

These statements are important in the context of any adaptive co-management efforts. They reflect an awareness of the need to constantly evaluate and adjust activities. They also acknowledge, in an explicit way, an open-mindedness to embrace a different epistemology (Kofinas, 2005) and to see this as a path to understanding other human beings, because it is “only way we can all learn about [Waodani]”.

A concrete example of experimental collaboration between an NGO and the Waodani is WCS's effort to promote sustainable use of non-timber forest products for handicraft production. Apart from providing sustainable economic benefits to communities, this collaborative project helps in keeping the Waodani ancestral knowledge and practices from vanishing:

With the emphasis on handicraft production, it was important to promote it in a way that the resources are used sustainably and that the Waodani women can have their own chambira palm nurseries. Women also proposed to start medicinal plants nurseries so they can produce their own natural products. Still, it was important for us to test what would work and what wouldn't before a longer-term project could really take off. We had a lot to learn from women and we still keep adjusting our work as we go. This work has been a long learning process for us (NGO Representative #9).

The project was revised a number of times throughout its duration based on a local feedback and input. Therefore, despite some on-going challenges, it constitutes a case where readiness to revise external assumptions by experimenting with various ways of managing palm nurseries led to mutual learning and an adaptive introduction of an innovative livelihood option. Importantly, the last two

excerpts show that current NGO representatives' willingness to incorporate the indigenous people's vision in co-management goes hand in hand with the recognition of the need to preserve the Waodani culture. In the context of ACM, these are important findings. They demonstrate both a genuine openness toward the notion of management diversity and an understanding of "the degree to which evolving cultural norms and values remain consistent with collective action and collaborative learning" (Armitage, 2007: 69).

Addressing the Waodani's passivity in collaboration

Some NGO representatives insist on the Waodani's active participation in externally-initiated projects even when this participation is not forthcoming on part of the indigenous people. This is especially evident in WCS's efforts to tackle one of the most pervasive problems in the Waodani SES. The NGO recognizes the necessity to counter the Waodani's passive dependency on outsiders which contributed to the creation of *el modelo asistencialista* (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001; Sections 3.3.2.2 and 4.3.1):

It is crucial to understand and respect the Waodani's internal dynamics and their cultural values [...] but not demanding anything from the Waodani is not helpful to them. They also have to invest their efforts and time and be a collaborative partner in projects undertaken in their territory. (NGO Representative, #5).

We can't be afraid to intervene and guide. This is an unique culture but the Waodani have to be more active in projects and in working with people. This is the only way we can help them on the way towards the transformation that is coming their way from the recent political changes (NGO Representative, #12).

They have to learn to pay consequences for not meeting the project goals, or disregarding previously established agreements. Otherwise they'll continue to be the same [...] just taking advantage of opportunities but not contributing much to anything that is done for them (NGO Representative, #13).

What emerges from these statements is a growing realization that a successful collaboration with the indigenous people requires maintaining a balance between respecting the Waodani's preferences and cultural constraints, on one hand, and introducing changes and accountability procedures, on the other.

Importantly, apart from statements and attitudinal changes, WCS has proven its commitment to breaking the Waodani' dependency on others with concrete management decisions. For example, the NGO introduced modifications to ways in which the Waodani contribute to events in which they participate. At the beginning of their involvement with the nationality, WCS technicians used to bring food to communities and pay community members for cooking during workshops or training sessions. Nowadays, however, WCS promotes the idea of obtaining a direct contribution from any community which benefits from these activities. Cooking is now assigned to a group of volunteers, and the Waodani also contribute their own food to organized events. As envisioned by WCS, it is one of the

small steps that are being undertaken to break the pervasive culture of external dependency. Furthermore, these steps are increasingly being followed by more ambitious ones such as putting the Waodani in charge of leading community mapping activities and management projects, including Socio Bosque.

Indeed, encouraging the Waodani to move away from the passive dependency as well as promoting an assertive but culturally-sensitive learning “from and with each other across different perspectives” (Huitema et al., 2009: n. pag.) could be crucial in building collaborative partnerships that instigate adaptive learning and experimentation. It was acknowledged not only by WCS but also by Fundacion’s Alejandro Labaka:

The idea is to make the Waodani independent so they can carry on projects on their own. Whatever project we undertake with the nationality has to be fully collaborative. It is important to have them involved as active participants in any initiative, so they can learn how things function. One day we might be gone and they have to carry everything on their own (NGO Representative, #4).

What would be the purpose of only telling them what to do? This would be just extending the dependency that missionaries and then oil companies promoted. Now, we collaborate closely, plan things together, and involve them in any activity. They are part of everything we do, and what is even more important they lead the processes and make decisions, with us just being by their side. Over the long-term, the idea is for them to take over projects and activities and be in charge because it is their territory (NGO Representative, #10).

Of course, the process of helping the Waodani to become more independent needs to be accompanied by building their internal organizational and management capacities. In this area, as well, some NGOs, such as Fundacion Nature, demonstrated action that can go a long way toward ensuring effective knowledge exchange and mutual learning:

The process of promoting economic activities within the communities was accompanied by continuous training of community members, so they can carry out the project into the future on their own. The implementation of the project was also accompanied by the reflection on what is happening in their forest and how hunting is affecting animals. We wanted communities not only to confront the problem from their own economic perspective but also promote their deeper understanding of the project and its goal. We wanted them to reflect on the future and how they wanted this future to look like. This has been the only way for the Waodani to really become the owners of the process, so they felt committed to carry it on into the future (NGO Representative, #5).

Furthermore, as discussed in Section 4.4.3, WCS’s activities, as defined under the USAID-funded project, focused primarily on enhancing Waodani’s management capacities by providing training in the area of accounting, administration, biological monitoring, project development, and GIS and navigation techniques. During the interviews with Waodani, one of the Waodani leaders addressed these efforts:

Now we have a group of technicians that are trained and can help with different projects for the nationality. Thanks to the help from WCS we are better organized and have more skills to work for CTIs and work on our Life Plan (Plan de Vida') (Waadani Leader, #3).

What all these comments have in common is a sense of awareness that one of the main goals of co-management efforts in indigenous communities should be increasing the level of self-determination of local people. This should lead, eventually, to the Waodani's "taking over and being in charge because it is their land"; a vision that concurs with the Waodani's own wishes to become independent from *Cuwodi* (Section 3.2.2.1). Long-term success of ACM projects in indigenous communities can also be measured by diminished necessity for external support in financial assistance, project maintenance, and the facilitation of interactions between the Waodani and the Ecuadorian government. Once local capacity has been sufficiently strengthened through the processes of knowledge exchange and mutual learning, a need for an external intervention becomes less urgent. This is what Ostrom (2005) envisions as a long-term objective of co-management efforts in common pool resources. The same applies to the Waodani people. With the culture of dependence being one of the most socially and ecologically destructive legacies of the post-contact period (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001; Lopez, 2011, Sections 3.3.2.2 and 4.3.1 2), the goal of enhancing the Waodani's self-management abilities needs to loom large over any adaptive co-management efforts. The fact that it does, at least in respect to WCS, is a positive sign.

8.3.3 Collaborative processes among organizations

Inter-institutional collaboration and bridging organizations

Inter-institution collaboration reiterates the importance of horizontal linkages for any ACM initiative (Harpham et al., 2002; Armitage et al., 2007; Section 2.5.2). Linkages on the supra-community level can provide a greater diversity, learning opportunities and sense of complementarity to multi-scale collaborative efforts (Charles, 2007).

In this context, some of the findings point to yet another challenge that can impact on future ACM initiatives in the Waodani SES. This time, the problem arises not from the insufficiency of vertical collaboration between NGOs and the Waodani but from the lack of horizontal co-operation among external actors operating in the region. Again, some NGOs appear not to appreciate the complexity of the Waodani SES. Instead of benefiting from all the possible linkages, a tendency of going it alone still manifests itself. During the individual interviews, this problem was addressed mostly by NGO representatives themselves:

There is a lot of deficiency in how NGOs work here in the region. There is a lack of coordination and communication as well as a lack of knowledge about what each of us is working on. Sometimes, we end up working on the same thing over and over again, so there is a lot of repetition and everything is disconnected or efforts are

scattered around. Organizations and their projects should complement one another, but unfortunately they don't (NGO Representative, #12).

The problem is that there are so many organizations that work in the Amazon. Some stay, some go away, but there is not much continuity because these organizations do not share information with each other. There is no knowledge transfer and I guess, we still haven't understood that working together is better for everyone. Instead, everybody offers something to the Waodani without coordination with others (NGO Representative, #4).

Firstly, these statements might apply to all NGOs in the region and further substantiate the general criticism of NGOs presented in Section 2.6.6. Limited funds and catering to the same donors can create a feeling of competitiveness among NGOs that can undermine knowledge exchange and nurturing diversity. Furthermore, the lack of inter-organizational collaboration presents the Waodani with too many competing opportunities:

The Waodani are spoilt because there is so much interest in them. They jump from one thing to another. Sometimes it feels like competition, with the Waodani passively picking different options they are offered by everybody who works or wants to work with them (NGO Representative, #1).

My perception is that the Waodani receive so much attention that they are just simply used to having people search for funds for them and help them to do things. As a result, they are not motivated to do any searching for additional funding on their own. If they want something, there is always somebody that will give it to them (NGO Representative, #2).

Eventually, this scenario poses the risk of fractured and inconsistent collaboration, as competing projects are being hastily abandoned in favor of others. Unintentionally, the approach reinforces the Waodani's traditional hunting mentality that has made them susceptible to the passive dependence on external actors (Section 4.3.2).

Still, despite the challenges identified here, one important positive aspect related to inter-organizational collaboration has manifested itself in the SES. WCS has been actively trying to coalesce activities of various interests group as well as to enhance linkages between the Waodani and the Ecuadorian State. Through these efforts, WCS has established itself as a bridging organization within the Waodani SES, which was also partly helped by its longer presence in the region than any other NGO and its long-term relationships with various governmental entities. It strives to facilitate both horizontal and vertical collaboration by providing a platform for seeking inter-organizational consensus, and for fostering adaptive learning and mutual understanding. Therefore, apart from being a co-management partner on its own, the NGO also serves as a go-between in the fragile socio-political and economic context of the SES. One of the participants encapsulated the bridging role of WCS:

Many organizations within the Yasuni region are coming and then leaving, but WCS has always been here. WCS works with everybody; with communities, with

indigenous groups, colonists, other NGOs, with the government. They understand the dynamics of the region, its politics, its needs and they know people involved in its management. They function as a link to everybody and are a source of knowledge about this place (NGO Representative, #3).

The existence of such bridging organizations is critical to ensuring successful implementation of ACM. As discussed in Section 2.5.3, broadening and strengthening linkages within the social-ecological system support knowledge exchanges and diversification of the management portfolio. This also fosters double loop learning which leads to the re-evaluation of fundamental values and norms governing the SES and thus allows for more adaptive preparation for uncertain future (Armitage et al., 2007).

In specific terms, the function of WCS as ‘a bridging organization’ is best illustrated by its support of the Yasuni Biosphere Reserve Management Committee (YBRMC). The YBRMC can be referred to as both a shadow and legitimate network, and as such can be, apart from providing leadership, instrumental in generating conditions favoring ACM (Olsson et al., 2004, 2006; Section 2.5.2). Among other efforts, WCS provided support to the YBRMC by organizing a number of discussion forums in 2012 related to, for example, infrastructure development, wildlife trafficking, illegal logging, tourism development and environmental education (WCS, 2012b). The events linked various actors within the network for the purpose of exchanging experiences and discussing actions needed to enhance resource sustainability within the region. WCS has also been a major provider of biological information related to region’s changes in wildlife abundance in response to hunting and road construction. This information is, in turn, being used by Yasuni parks officials in the development of local wildlife management strategies. The supportive and bridging role of WCS was recognized by government representatives to the YBRMC:

WCS has been playing an important role within the Yasuni Management Committee. It has been linking various groups and providing technical support to our initiatives by giving us important field-based information, especially biological data. This has been extremely helpful because we need this information to better manage wildlife in the park. It is also important that WCS is on the ground, with the communities, working with them on a daily basis and supporting their projects. They have been here in the Yasuni for a long time. Not many organizations do that. (Government Representative, #13).

Furthermore, apart from its involvement with the YBRMC, WCS also demonstrated its bridging abilities by linking Waodani communities with GADs operating in the SES:

We [WCS] have a very good relationship with governmental bodies and we also have the capacity to work in the field with local communities. The experience we have here, in the area, helps us identify problems and link local people with other organizations or governmental institutions to help them deal with problems (NGO Representative, #8).

My own experiences also give support to the view that WCS is successfully functioning as a bridging organization in the Yasuni Biosphere Reserve. For example, I was closely involved in efforts leading to signing the Socio Bosque agreement between MAE and NAWE. WCS has served as a liaison between parties. The organization worked on enhancing the Waodani's participation in this incentive-based forest conservation program (Section 4.4.2) and supported the Waodani's compliance with the program's requirements. During the individual interviews, one of the Waodani leaders expressed an appreciation of the WCS work:

WCS has helped us to work closer with the government so we can join the Socio Bosque program and receive money to better manage our territory (Waodani Leader, #4).

Importantly, the role of WCS as a bridging organization will likely become even more pronounced in the near future, as local and regional government entities are being formed, and as new challenges related to creating linkages among various actors emerge.

8.3.4 Funding

Funding objectives, sufficiency, and sustainability

As discussed in Section 2.6.6, NGOs operate in a funding-driven environment and are often dependent on donors whose values and expectations do not necessarily reflect factors needed to build resilient SESs. Promoting externally defined objectives can go against the notion of learning from one another and of on-going adaptation to changing socio-ecological conditions on the ground (Edwards and Hulme 1996; Banks and Hulme, 2012).

Some participants were critical of NGOs' focus on meeting their external benchmarks and donors' demands at the price of neglecting the Waodani's most-pressing needs:

It is difficult to design a project on the ground. It has to be innovative and has to respond to all the expectations of a donor. We start being repetitive, propose projects that others can do or already have done; we invent things that do not relate to the reality on the ground just to get funding (Specialist, #5).

Each foundation or donors has its vision of a project and its goals. Today, it is hard to get funding, and there is a lot of competition among organizations. Sometimes you just propose things that satisfy the donor so you can receive funding, but you know that what you propose might not necessarily be a priority for indigenous communities and organizations here. You have to balance between what you think is important and what catches the donor's attention (NGO Representative, #5).

I know many cases, where an external organization comes with a vision on how to do things without even understanding the local dynamics. They care about their donors' objectives but not about those of local communities and people (Government Representative #3).

In the case of the Waodani SES, such disregard of local needs and using indigenous communities as an object to secure funding undermine co-management initiatives, since the Waodani might begin to feel being used or taken advantage of, as it was already discussed at the beginning of Section 8.3.2.

Moreover, apart from being limited by externally defined priorities and goals, NGOs' involvement in the SES is also undermined by short-term funding (Goldstone et al., 2005; Blanco and Grier, 2009; Banks and Humle, 2012; Section 2.6.7). As it was argued during the interviews, insufficient external funding often prevents NGOs from fulfilling goals and commitments made to communities. In addition, long-term collaboration is a prerequisite for instilling trust and mutual understanding which, especially in indigenous contexts, can contribute to adaptive learning, willingness to experiment, and a genuine exchange of perspectives (Kendrick, 2003; Kofinas, 2005). Often, a decade or more is needed to achieve these goals, and, even then, some level of external assistance is likely to be required (Armitage et al., 2009):

The projects you initiate with indigenous people may always require some assistance and supervision. Five years, ten years ... look we are working with the Waodani almost 20 years but we still have to be behind the tourism project and help them to manage the lodge. There is almost no chance that some of the processes like detailed accounting or project marketing could solely be led by the communities (NGO Representative #6).

The problem is that NGOs continue to depend on outside factors for funding and have limited project time-frame. You rarely get projects that last more than one or two years. This is a huge problem and there is not much time for learning and adjusting because you have to finish a project and deliver results fast. Sometimes, however, you can only see results of your activities after many years of working with communities and their organizations. These are slow processes and if you withdraw after two years or so, your efforts may just not have any impact and they will be just wasted (NGO Representative, #13).

I worry about the projects that have their cycles and then they are gone. Projects that just don't last long enough to make a difference [...] and long involvement is crucial, especially with groups like Waodani. Everybody who come here to work should take this into account before starting any activity (Government Representative, #3).

Overall, the distinctiveness of the Waodani culture, their organizational and capacity-building challenges, and the remoteness of individual communities necessitate focusing on lengthy and well-funded projects to make a significant difference to the sustainability of the SES. However, external funding systems continue to disregard the complexity of working with the Waodani, which might prevent NGOs from effectively engaging in adaptive co-management. For example, the cessation of USAID's four-year funding of WCS's efforts in the Waodani communities impacted on the NGO's ability to strengthen territorial management and organizational capacities of the indigenous people. Even though the organization was able to use some funds obtained from the Betty and Gordon Moore Foundation, this was not enough to provide the same level of assistance and expertise. As a result, the

support of NAWE technical group, capacity-building training sessions, and the overall involvement in individual counties had to be curtailed (pers.obs.).

8.4 HOW DO NGOS AFFECT CHANCES FOR FUTURE CONSIDERATION OF ACM IN THE WAODANI SES?

As in the case of the Waodani people, addressing NGOs' impact on future consideration of ACM in the Waodani SES requires analyzing the themes emerging from the above discussion in the context of the components of the emerging window of opportunity (Section 4.4).

Seen from this angle, NGOs' providing limited space for collaboration and their reluctance to include the Waodani's knowledge and input into decision-making processes could affect the already initiated multi-actor collaboration. Furthermore, these perceived deficiencies are exacerbated by NGOs' bypassing NAWE in the preparation and implementation of projects. What emerges, therefore, from all these concerns is a relative lack of trust towards the Waodani and their management competence. Such trust is, however, necessary not only because it makes NGOs more receptive to indigenous knowledge and the principles of shared management, but also because it prevents resentment on the part of the neglected Waodani (Section 4.3).

There are, however, strong indications that some organizations are making a determined effort to overcome these challenges. Indeed, most of the statements obtained from current NGOs' representatives point to a greater appreciation of the Waodani's knowledge, culture, and management input. These attitudes carry the hope of more meaningful knowledge exchanges and adaptive learning than in the past. As it was argued in the rationale for the study, the past does not have to foreshadow the future. External actors' views about and perceptions of indigenous people might be undergoing a long overdue change, similar to the processes taking place in society (Rival, 1994). Indeed, it is possible that some of the criticism expressed by the Waodani toward external actors could be colored by their past experiences with individual researchers or NGOs, many of whom were involved with the Waodani on a temporary basis and are no longer present in the SES. It is difficult, however, to determine in which cases and to what degree this is the case. Importantly, some organizations, such as YRS, have taken concrete leadership and management steps to distance themselves from the previous views and mistakes. In the context of these efforts, "*persisting through it all*", as stressed by one NGO representative, becomes a key to building long-term collaborative processes with the Waodani, and enhancing trust that lies at the core of collaboration.

Furthermore, large and especially influential NGOs, such as WCS, consciously promote participatory and multilayered management, which explicitly includes incorporating NAWE. These actions could

add diversity to the collaborative context and, in relation to NAWE, strengthen this organization's legitimacy in the Waodani's still relatively egalitarian society (Sections 3.3.1 and 4.3.2). Strengthening NAWE is also necessary since the Waodani's vertical collaboration with the State, their participation in multi-organizational structures such as the YBRMC, and generating collective action across the nationality require a strong central leadership (Section 2.5.2).

WCS also concentrates part of its efforts in the SES on enhancing local capacities and addressing the Waodani's passivity that has made them susceptible to *el modelo asistencialista* (Section 4.3.2). Providing learning and capacity building opportunities is critical in light of the adaptive component of ACM (Section 4.4). In more immediate and specific terms, it could make the Waodani better prepared for self-management, decentralization, and accessing funds through proposal writing, all of which became a reality with the passing of the new constitution (Section 4.4.1).

Still, NGO representatives' growing appreciation of the Waodani as a collaborative partner needs to be sustained over a long period of time to make a lasting difference (Ostrom, 2005; Banks and Hulme, 2012; Section 2.6.7). In this area, however, some challenges emerge because projects still operate on short-term funding. In light of the lengthy duration of ACM, the shortage of funding presents a danger of having projects that are started but never completed. Unfortunately, the cessation of existing initiatives with the Waodani can erode the indigenous people's trust towards external actors and thus make any future ACM projects even more challenging. Indirectly, it also discourages inter-institutional collaboration, because sharing and learning from one another is replaced with various NGOs' competing for increasingly scarce funds. As a result, fostering linkages throughout the polycentric structure can become negatively affected (Section, 2.5.2)

All these facts are especially concerning since such components of the window of opportunity as the Socio Bosque program are supported by and associated with NGOs. Moreover, NGOs' impacts on a future ACM initiative need to be considered not only in the context of funding duration but also in light of its externally defined priorities. NGOs' focus on meeting externally defined funding priorities can divert them from meeting the most pressing needs in the Waodani communities.

On a positive note, however, there have been attempts on part of some current NGOs and their representatives to tackle the challenges inherent to an external funding scheme. Firstly, there is a growing understanding among NGOs' employees that any engagement in the Waodani's SES needs to be lengthy and substantially funded to make a lasting impact. If maintained and strengthened, this sense of understanding could, conceivably, bring greater attention to the issue of project sustainability, which, in turn, could have a positive influence on future funding decisions. Secondly, WCS, especially, has shown commitment towards long and consistent collaboration in the SES,

despite its funding challenges. In all likelihood, the organization will maintain its presence in the region for years to come, which, given its size and a diversified funding base, could become a significant contributory factor to any successful ACM initiative in the SES.

Finally, WCS has also solidified its role as a bridging organization in the region and is poised to assist in activities of such newly created governance structures as the YBRMC. This is important in the context of ACM because of the YBRMC's potential to considerably diversify the management structures of YBR and its role as both a shadow and legitimate network (Olsson et al., 2006, Hahn, 2011; Sections 2.5.2, 3.2.1.2 and 4.4.4).

In the end, therefore, despite some challenges related to NGOs' impacts on the SES, this external actor has to be considered, in totality, a genuinely contributory component to any window of opportunity that the Waodani must seize to transition their SES towards adaptive governance. This especially applies to WCS that has the longest and the most wide-ranging involvement in the region. Still, the context associated with NGOs' presence in the Waodani SES remains fragile and, to a degree, uncertain - including WCS's presence and efforts - due to these organizations' dependence on external funding sources. Overall, however the general trajectory carries a number of positive undertones.

8.5 THE ROLE OF THE ECUADORIAN STATE IN THE POTENTIAL IMPLEMENTATION OF ACM IN THE WAODANI SES

8.5.1 Values and perceptions

The level of trust towards the Waodani

As discussed in the previous section, in the case of NGOs, the existence of trust between these organizations and the Waodani can foster the implementation of small-scale projects to improve local livelihoods and strengthen indigenous people's capacities to manage their land. On the other hand, the existence of trust between the Waodani and the Ecuadorian State is crucial to the implementation of the recent political, legal, and economic changes (Sections 4.4.1 and 4.4.2).

Unfortunately, on the part of the State, there is a lack of trust as to the Waodani's organizational and management capacities:

NAWE representatives never come here, never inform us about anything [...] there is no organizational structure within the Waodani nationality with which everybody agrees. Because of the differences, inconsistencies and lack of communication between NAWE and the communities, the processes are just getting stuck. For us as ECORAE, it is difficult to initiate any activities because we need more consistency within the nationality and better internal organization we can communicate with (Government Representative, #15).

The Waodani are not trustworthy and this is frustrating. As the government, we need organizational stability to be able to implement long-term processes and unfortunately this is still very hard to do with this nationality (Government Representative, #3).

The central government imposes strict rules on us as a governmental institution [ECORAE], on how the money should be invested. They think that if we give money to NAWÉ, they will just spend it on whatever. There is simply no confidence in collaboration with this nationality (Government Representative, #16).

Some of these issues are valid and have been already mentioned in regards to the Waodani leadership (see Section 7.2.2.2). Still, governmental employees' dismissive and defeatist attitudes towards the Waodani could have serious practical implications for co-managing the SES:

MAE didn't want to start the fish farming project with the Waodani. They kept saying that the Waodani couldn't be trusted and that they might raise fish species in pools that are not native to the region just because they like their taste better. As a result, MAE did not give them authorization for this fish farming project (Government Representative #9).

In addition to being reluctant to provide the Waodani with project opportunities, the State shows hesitancy about investing into capacity building programs that could benefit the nationality. Sometime ago, when I was in Puyo, I asked an ECORAE representative about funding for a six-month GIS and territorial management training program for the young Waodani that had been proposed by the Universidad de San Francisco in collaboration with WCS. The ECORAE representative indicated that he had doubts about providing NAWÉ and the Waodani, in general, with any funding, because, according to him, Waodani had not enough patience and commitment to last through six months of training. Unfortunately, such views could translate into decision-making choices that could limit the indigenous people's opportunities to strengthen their educational level and technical skills.

What makes the situation even more discouraging is that the lack of trust towards the Waodani on the part of the government is increasingly felt and resented by the indigenous people. The Waodani are growing impatient with the State's attitudes and actions, which could only lead to suspiciousness and deepening the gap between the two parties. As a result, fostering trust-building and mutual learning that underpin ACM can become even more difficult to accomplish:

Nobody from the government comes to visit us here [...] only recently one person came from the Pastaza Provincial Government. But this is a first time after 20 years, maybe (Participant #2.5, Kiwado).

For five years we asked the parish officials for different things but they did not give us anything. They never come here to the community. Then, they say that they will come and call us that they are on their way and we wait and wait but they never come. They only talk and nothing more [...] nothing is happening (Participant #1.1, Guiyedo/Timpoka).

There is also a belief among the Waodani that the State - distrustful of the indigenous people's management skills - is not committed to keeping promises that were made to them:

When the government comes to the community they offer it everything. They say that they will give people jobs, give them projects and then people accept it. But then nothing happens [...]. When communities go directly to the offices in the city, the government says that they are too busy to talk and then nothing happens. Then when communities, go to the offices and bother them, then the government people say that there are not funds to work on the projects they promised. This bothers us a lot [...]. Sometimes they say that we live in a different world and it is hard to work with us. But they do not give us many opportunities; they do not give us jobs, or time to finish things (Waodani leader, #9).

The government promised us that it would help us with schools and health centers. But nothing happens. We still have nothing in our communities. We do not even have clean water to drink. The government lies to us (Waodani Leader, #10).

This view was expressed by a Waodani woman, a member of AMWAE, and her preoccupation with "schools and health centers" shows, again, how important these aspects are for Waodani women. It also reinforces the argument that women would press for giving an even greater priority to health and educational services and for ensuring the long term sustainability of natural resources (Section 7.3.1) in any future co-management activities with the State.

Community members also make an effort to provide governmental institutions with required proposals, but they are unlikely to see the results of their work:

They [Municipality] say that we should propose projects to develop tourism in our community. So we write a proposal and give it to them. Then they tell us that they no longer have money for us because they already gave it to Sarayaku. The government never helps us and they promise us thing but never do it (Participant #1.2, Batabudo).

The Waodani also perceive the State as unwilling to work directly with individual communities and their members:

The provincial government does not organize meetings with the communities directly and they only want to do it with NAWA [...] they want to plan with NAWA about the whole nationality [...] The provincial government does not want to communicate with the communities but it does not understand that NAWA is not helping us (Participant #2.5, Kiwado).

The State's preference for working only with NAWA also emerges from individual interviews:

[...] we need to have a central governing body to negotiate with and for accountability purposes as well (Government Representative, # 15).

I understand that the NAWA president should represent all communities and he should provide communities with the information about actions we are proposing and the manner we want to work with them. This is the responsibility of the president. It would be difficult for the Ministry to go to each community separately to identify and propose its strategies. There is a question of time and logistics (Government Representative, #5).

On the surface, the State's willingness to work with NAWE could be seen as a positive sign, especially in the light of some NGOs' reluctance to collaborate with the Waodani central leadership (Section 8.3.2). However, since the State's dealings with NAWE leaders are, at the same time, accompanied by the disregard of voices of other Waodani, a gap between what is beneficial for the administrative sphere and what helps communities emerges. The State's historical reluctance to deal with 'the savages' – best illustrated by the 20-year agreement with Maxus (Section 3.3.2.2) - might partly explain its continuous abstaining from realities faced by the ordinary Waodani (Kane, 1995; Rivas Toledo and Lara Ponce, 2001). The 'messy' and threatening jungle remains, indeed, less familiar or approachable than the more structured negotiating process with the central leadership. In the end, regardless of its cultural or historical origins, the State's refusal to become more directly involved in the lives of ordinary Waodani can feed the indigenous people's mistrust towards 'outsiders' (Robarchek and Robarchek, 1992).

Knowledge and appreciation of the Waodani and their needs

One of the problems mentioned during the focus group discussions and individual interviews relates to governmental representatives' reluctance to familiarize themselves with true needs and concerns in the Waodani communities.

Municipality wanted to give us licenses so we can be local tourists guides and then we went for training [...] but what can we do with a tourist license if we have no tourism projects to use it for? Government people introduce things we can do nothing with (Waodani Leader, #5).

The same interviewed Waodani also countered some of the government's touted achievements presented to the media. For instance, an article in El Ciudadano, (2011) mentions that ECORAE provided the communities of Tiwino and Batabudo with three boats to help community members in transportation along rivers. Responding to this, the Waodani leader said:

ECORAE gave us, after so much fighting and putting a lot of effort, two canoes and one motor. The problem is that these canoes are for use in big rivers such as Napo or Curaray, but not for our small rivers that are narrow and shallow (Participant #1.1, Batabudo).

As one of NGO employees states, there are many factors behind the State's ignorance of the Waodani's real needs:

There is lack of willingness, knowledge, technical capacity, fear...there is a mix of factors. Specifically, however, I think there is lack of knowledge of the Waodani culture and traditions. In reality, there is still a big fear of working with the Waodani as they are still perceived as violent and unpredictable (NGO Representative, #5).

MAE has no knowledge about Waodani, their culture or their traditions and it doesn't co-operate with them. They also do not have people to stay and work in the communities (Specialist, #2).

As argued by Allen and Gunderson (2011), managers and government representatives often fail to understand real needs of local people and, instead, settle on “anticipat[ing] user’s viewpoints” (2011: 1381). As a result, traditional knowledge and local expertise are not incorporated in decision-making processes (Raihan, 2010). Unfortunately, therefore, a combination of preconceived attitudes, lack of willingness to learn, and even fear undermine forging a truly collaborative and mutually learning environment between the Ecuadorian State and the Waodani people.

Still, despite these negatives, the overall picture is not entirely bleak. For instance, some current state representatives recognize the uniqueness of the Waodani culture and the fact that they have been abandoned by the State in the last few decades:

The Waodani have been abandoned by us for so long and we did not assist them in anything. I think we have to start changing this and understand better how the Waodani see their development, how they see environmental conservation, how their culture influences their decisions and how it should be part of our future territorial planning (Government Representative, #3).

There were so many different projects with the Waodani [...] but the government didn’t get involved too much with any of the communities. We are trying to change it now. It is important that the community decides about their projects and that we respect people’s traditions and culture in any activity we are undertaking with them. Of course, balancing people’s needs, traditions and projects is going to be a challenge and, I believe, we still have a lot to learn (Government Representative, #12).

The beliefs of some of the current government employees that the Waodani have been abandoned for so long could be argued to bode well for future collaboration efforts. As Borrini-Feyerabend et al. (2004: 36) indicate, “promoting co-management is particularly problematic where there is a little support from government or because of prevailing negative attitudes and negative historical legacies. In such contexts, the role of innovative, charismatic or dynamics individuals is often crucial”. They call these individuals ‘champions of change’. Indeed, as discussed in Section 2.5.2 and argued by Olsson et al. (2006), leaders constitute a critical factor in fostering shadow networks and thus increasing chances for successful adaptive co-management initiatives. They are essential to enhancing social preparation by promoting alliances, building local capacities, raising awareness, and consciously taking actions to overcome various management barriers (Moser and Ekstrom, 2012).

There are also indications that some governmental employees currently working in the communities go beyond rhetoric and are taking practical steps to incorporate the Waodani’s culture and knowledge into various stages of project development and implementation:

I think it is possible to work with the Waodani but you have to recognize their internal dynamics; their way of life and their vision of the world [...] this all needs to be incorporated into designing any project with them. The Waodani could be, for example, park guards since they can walk long distances and know all the tree

species, and animals. Instead of contracting colonists as park guards here in the Amazon, we should give these jobs to the Waodani while allowing them to work within their own proper dynamics. If we impose things from outside that will not work (Government Representative, #7).

As MAE we try to involve ourselves in work with the Waodani. For example, we hired them as the park guards in the Yasuni National Park. It is actually the first time that we have the Waodani as park guards and they do a good job in the field. This process opened a space for us to work with them more closely. They know so much about this region, and their knowledge and skills have to be taken advantage of and, appreciated. (Government Representative, #13)

In some cases, government representatives are also moving beyond the ‘convenience’ of dealing with NAWE criticized earlier and are adjusting their practices to account for the Waodani’s internal dynamics:

Sometimes, meetings with the Waodani are very hard, because at the beginning you have to listen to all the complaints about the central government, or the local one, and how they promise things but never deliver. Only after you sit down with the whole community and stay with them for a while, you can really understand its problems and true necessities people have. You can also understand the dynamics of the community. There are some communities where only presidents or leaders go to the cities to converse with authorities. However, they never inform the community about what is happening and about the ideas they discussed with the government. Consequently, we always try to ensure that we create participative spaces where we can bring the majority of people from the communities to inform them about projects and where we try to promote and enhance their true capacities (Government Representative, #11).

These statements demonstrate that recognizing the internal dynamics of Waodani can be an important aspect in promoting genuine collaboration and shared understanding, and thus redressing some of the challenges identified earlier in this chapter. What is also crucial is that some government employees increasingly take into consideration the context in which the Waodani became ‘incorporated’ into the Western world:

The current community investments can’t be just gifts, we have to work hard to correct previous errors committed by oil companies and learn from those errors, too. We have to, thus, propose something for the community that can have long-term results and benefits [...] but the Waodani also have to provide us with their counterpart in any future project to demonstrate their commitment to the processes we initiate with them. We can’t repeat the same mistakes from the past and just give them things but not ask for anything in return (Government Representative, #5).

Our main challenge with the Waodani is to ensure that things will last. Our strategy is to work with them together and to create conditions where they can become advocates for their own proper spaces and for the social or political changes they are facing right now (Government Representative, #11).

These statements demonstrate an awareness of the Waodani’s cultural predispositions as well as of the State’s past mistakes. They also indicate a commitment to correcting these mistakes in the future by

including the Waodani as real partners and ‘protagonists’ in collaborative processes that could break the ‘dependence’ mentality. In the context of ACM, these statements are especially worth noticing because they indicate that, for some governmental representatives, collaborative interaction with the Waodani people has an adaptive component to it. Re-evaluating previous mistakes is, after all, strongly indicative of a potential for both single and double loop learning (Berkes et al., 2003; Armitage et al., 2007; Section 2.5.2).

8.5.2 Creating a participative and collaborative context

Changing the Waodani’s relationship with oil companies

As discussed in Section 4.4.1, in accordance with the Hydrocarbons Law (*Ley de Hidrocarburos*), private oil companies can no longer subsidize education and health services in the Waodani communities. Instead, 12% of private oil companies’ income will be invested - through GADs - in projects that directly benefit the Waodani nationality. Therefore, communities will have to present their project proposals with specific ideas directly to GADs and be a part of a yearly ‘participative budget planning’ (Ministerio de Interior, 2012; Repsol-YPF officer, pers. comm.).

The Hydrocarbons Law thus provides the Waodani with an incentive to break their decades-long unsustainable dependency on oil companies. The potential benefits of the Hydrocarbons Law were mentioned by some external actors. Firstly, the law breaks oil companies’ power over the Waodani:

The law takes away the oil industry’s direct power over communities. This could be a good thing because the Waodani have grown so dependent on oil companies, and this, obviously, cannot be sustained (Government Representative, #15).

Secondly, since the Hydrocarbons Law requires from the Waodani to write proposals and actively seek money for projects, they will have to move away from the passivity that defined their relationship with the oil industry:

They [oil companies] turned the Waodani into beggars, demanding things and getting them to stay quiet. They were kept for a long time in this subservient relationship. “Oil spill, here is the money, just be quiet”. Nothing was required from them, no collaboration, no work [...]. Now they would have to be more active, have a vision, be more participative and self-determined (Government Representative #4).

Setting a foundation for the Waodani to collaborate with the State through discussions and proposal writing could be beneficial in light of any future ACM initiative. Firstly, it creates a context for the Waodani and the State to actively participate in on-going exchanges and negotiations, which strengthens the interlinkages of the emerging polycentric structure. Secondly, the law creates a motivational incentive on the part of the Waodani to enhance their skills and educational capacities. Since knowledge and specific abilities - such as preparation and writing proposals - will now have tangible benefits, education, knowledge exchange, and seeking innovative approaches can attain even

greater importance for the Waodani. This fact can, in turn, foster collaborative processes between the Waodani and NGOs. NGOs could help the indigenous people increase their capacities through the implementation of training programs, and thus, make them better prepared to face future uncertainties, even after the oil industry is gone.

However, to allow the Waodani to benefit from any recent changes, social preparation needs to take place. On the surface, according to the interviews with government representatives, there is an intention on the part of the State to invest more efforts to familiarize the Waodani with the recent constitutional changes and the new political and institutional structures:

We organized an assembly in the rural parish where representatives of all communities came. During these meetings we explained how to apply for funding and projects, how much money we have in the budget for a given year, and what type of projects we prioritize for the investment based on our Territorial Development Plan (Government Representative, #6).

We had many meetings with the Waodani explaining to them the idea of the 12 percent rule, under the new Hydrocarbon law, and how they can access money for their communities (Government Representative, #16).

Still, in spite of this, the Waodani's knowledge and understanding of the new changes remains limited. For example, there is a lot of uncertainty and confusion about the redefined relationship between the Waodani, the State, and oil companies operating in the region:

We always had help from the oil companies, but now they don't want to give anything and we do not know anything what is happening. They [oil companies] are no longer interested in helping us in education, paying for professors, health [...] we had the private health insurance, and now they say that the government is responsible for all that [...] but we do not get anything from the government. We do not understand how to work with government (Participant #1.4, Batabudo).

I don't know much about 12 percent they talk about. Oil companies tell us that they will not pay us anything and that the government has to give us money. But nobody comes here to talk about it (Participant #1.1, Guiyedo /Timpoka).

The Waodani's confusion about the coming changes could undercut trust-building efforts that are crucial to forging vertical linkages (Armitage et al., 2007). The Waodani's confusion and even their anger were noticed by one governmental representative:

The Waodani do not understand well all the new laws and regulations. Yes, they slowly start to understand that the State is responsible for projects and that the oil companies no longer can give them money. Still, they think that the money from the oil exploitation goes directly to local governments. They heard about the 12 percent distribution and now they do not ask the oil company but come here to the municipality and ask for money. They do not understand the new structure. "Now 12 percent", they say, "has the municipality". They come here and ask for money in an aggressive way. They come and say "here is the money from the oil from my communities so just give me my money". This shows the lack of clear communication with the Waodani, and sitting down and explaining to them how this all works under the new constitution (Government Representative, #6).

The Waodani's confusion about the coming political and institutional changes is also admitted in a newsletter issued by the Ministerio de Interior (2012) which states that the Waodani:

“insistían que se entregue ese 12% en dinero a sus dirigentes y luego repartirse según las necesidades de cada miembro/insisted that the 12% be given in the monetary form to their leaders and after that they will distribute the money among the community members according to their needs (translated by M.B)”.

Indeed, it appears that, for the Waodani, the transition from the dependence on oil companies to an active interaction with the previously absent State has been too haphazard and too hastily implemented. Ironically, similar to the early years of oil exploration (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001), the State has failed to appreciate the importance of cultural differences and has not invested enough in social preparation to ease the transition into the new institutional and political system:

The Waodani's cultural transformation has been too fast; from the Stone age to the oil age, and now again they face these new drastic political changes that will affect their lives. However, they were never given any time to prepare themselves to face these changes. They do not know how to do things that are currently required from them, like negotiating with the government or managing their own projects and money (NGO Representative, #1).

Furthermore, not only is the amount of communication insufficient but also the way in which communication is done remains culturally and linguistically inappropriate:

The government officials' give presentations about the new political structure and new responsibilities they have towards communities, but they do not communicate these processes clearly. They use their professional language that people in the communities do not understand. They come to a meeting, talk and then they are gone.[...] still things are not explained in a way that people can understand. Then, if communities keep asking them the same questions, they [government officials] get angry that they have to keep explaining it all over again (Specialist, #2).

I can attest to this failure of communication. I had an opportunity to participate in a meeting between NAWE and the Ministry of Non-Renewable Resources devoted to the allocation of funds collected from private and State-owned oil companies. The presentation was long and convoluted, and it was filled with complex graphs, calculations, and projections for the future. After the meeting, the Waodani remained silent for a while. Then, they asked governmental representatives how they could get money and whether they would have more local projects in their communities. It was obvious that the Waodani could hardly follow the graphs and the projections presented by the Ministry. They simply went back to the same questions they had asked before the presentation.

Not surprisingly, therefore, a feeling of being ‘trapped’ in a confusing reality emerges from some of the participants’ statements. It is especially evident in regards to writing proposals for projects and funds allocation:

Now the government asks us to present proposals and manage our own projects, but we have not done it before. We are not sure how to do it and the oil companies tell us that they are not obliged to help us or give us more things (Waadani Leader, #5).

In the meeting with the governor of Pastaza, we were told that we have to do a proposal for the project and leave it in his office. However, we do not know how to do it. Governor said that he is open to collaborate with us [...] they can offer us training on how to do the agricultural project in the community. Still, first we have to present a proposal and this is where we have nobody who can do it (Participant #2.5, Kiwado).

The concept of developing proposals and applying for funds is something foreign to the society whose contact with civilization was largely shaped by relations - often antagonistic - with the oil companies (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001; Ziegler-Otero, 2004; Section 4.3.1). The State's failure to understand this fact was acknowledged by one of the governmental employees:

NAWE presents a proposal to us and they identify what they want to do. They put a lot of effort to prepare this type of the proposal for the CTIs project. They come here to talk, but in most cases we have to reject their work because they do not address the law properly and they don't meet technical requirements [...]. They just can't write well, and having worked with them for so many years, we should know that (Government Representative, #16).

Imposing unrealistic demands on the Waadani people without giving them a prior preparation could be argued to reflect the lack of willingness to learn and adapt on the part of the State. Instead of engaging in mutual learning, a rigid adherence to the Western technocratic approach prevails, reflecting thus one of the challenges of implementing co-management in traditional societies that was identified in Section 2.6.2.1. The State appears oblivious to the reality that the Waadani are educationally and culturally unprepared for an instant transition into technocratic project management. This transition is a complex and multi-faceted process that requires long-term capacity building efforts and an extensive social preparation (Berkes, 2009). This is especially crucial in the context of Waadani SES where the culture of dependence and passivity is so ingrained that undoing it will not be an easy task (Yost, 1981; Rivas Toledo and Lara Ponce, 2001, Section 4.3.2).

Creating space for social participation

In the Ecuadorian Amazon, a space for social participation in decision-making related to territorial planning and management is guaranteed by the new constitution. Furthermore, organic laws, such as COOTAD (2010), recognize the rights of indigenous people to participate in project planning and development as well as in decision-making processes related to their territories (WCS-UNESCO, 2011; Asamblea, 2008: Art. 279). There are established participative mechanisms in place, especially in regards to the development of public policies and the recognition of communities as basic units of social control processes (Asamblea, 2008: Arts. 241, 248, 250, 279 and 280; Asamblea 2010: Arts. 303 and 302). According to the newly introduced changes, local governments, on both a provincial

and municipal level, are entrusted with the task of enhancing indigenous participation in all areas of territorial management. This issue was addressed during interviews with governmental employees:

As the Department of Productive Development in Orellana, we are working according to the new laws and COOTAD regulations. We are also promoting the citizen participation and we are creating participative budgets that are coordinated and distributed to the communities according to the necessities that are defined by them directly (Government Representative, # 2).

The methodology to elaborate the participative budget is an open process. This is a space where decisions take place and where the communities propose their projects and ideas. We always respect the communities' ideas and visions [...] and we simply facilitate the processes and allow community members to participate and make their own decisions. With the Waodani, we manage the process in the same way and then we are reviewing all their necessities according to certain criteria we have for assigning budgets and projects (Government Representative, #6).

COOTAD thus represents a valuable legal framework for the State to be more involved in promoting new conservation policies through social participation processes (Global Witness, 2014) The implementation of the Socio Bosque program in the Waodani SES (Section 4.4.2) demonstrates, in specific terms, the closer involvement of the government with the Waodani leadership structures and communities. The program's requirement to develop an investment plan in each community sets the stage for broad co-management processes within the SES. An investment plan has to be created in a participatory and collaborative way by each community that is either entering the program or is eligible for a yearly incentive within the program³⁷ (Podvin, 2013). Furthermore, these plans are usually created in close collaboration with representatives of MAE in line with Socio Bosque investment guidelines to ensure that funds are used for locally appropriate economic, conservation, and poverty-alleviation processes (de Koning, 2011). Still, communities have a considerable level of flexibility in prioritizing their needs and visions of the development (PSB, 2012a):

Socio Bosque is an important initiative because it lets the communities define their priorities for development and conservation. They are in charge of making their own decisions how to invest the incentive money, even though it is done under the government's guidelines. But this is the first time that the government asks the communities what they need and collaborates with them to ensure that they can have money designated for the activities they themselves define (Government Representative, #14).

Socio Bosque will help the Waodani to meet their basic necessities. It is important that their investment plans propose productive projects, so they can sustain their activities and generate additional income by building, for example, infrastructure. We can then enter the communities to train people and promote and facilitate the process. We can finance some additional activities but the community already has the capacity and can contribute to the process with its own money. (Government Representative, #5.)

³⁷ Each participating community has to present, on a yearly basis, a participatory investment plan. The plan's categories include conservation and territorial consolidation, socio-cultural development, organizational strengthening, economic or productive activities (PSB, 2012c)

The Socio Bosque program creates thus a platform that can help in fostering both horizontal and vertical collaboration within the SES. Its binding structure and operational rules bring the Waodani closer to one another and sustain co-management processes between the Waodani and governmental entities. For instance, the program requires from government officials to be involved in long-term evaluation processes through the monitoring of semestral reports and activities taking place in the field (Podvin, 2013):

We try to follow up with the Waodani about activities defined in the investment plans and review their budgets on a monthly basis. It is sometimes difficult to commit more time to them because we are involved with so many other indigenous groups and individual landowners and we simply may not have sufficient personnel and time. But we definably want to work, and have to, closely with the Waodani to ensure that they continue their involvement in the program into the future (Government Representative, #14).

Based on my personal experiences, Socio Bosque technicians often try to work closely with NAWE and the Socio Bosque coordinator (Fernando Nihua), despite having other responsibilities. (pers. obs.).

In addition to supporting nation-wide participatory programs such as Socio Bosque, the Ecuadorian State has given legitimacy and provided leadership to an important collaborative platform that has recently emerged in the region. This is Yasuni Biosphere Reserve Management Committee (the YBRMC) which is a multi-actor management structure led by MAE (see Section 4.4.5). Multi-scale participatory management bodies, such as the YBRMC, could be conducive to ensuring sustainability of SESs through the processes of ACM. Indeed, the whole premise behind the creation of biosphere reserves - the YBR being one of them - is to establish a setting where “the capacity (e.g. knowledge, power and resources) to solve complex problems related to the implementation of the biosphere reserve concept is [...]widely dispersed among a set of actors local on different scales” (Těšitel and Kušová, 2012: 76). Furthermore, as argued by Olsson et al. (2006, n. pag.), “adaptive co-management of ecosystems usually starts with responses to crises by individual actors that expand to groups of actors and eventually become multiple-actor processes” (see Section 2.4.1). The multi-actor structure of the YBRMC governance network could thus function as a shadow and legitimate network in the region (Hahn, 2011; Section 4.4.5). Some governmental employees mentioned the importance of the YBRMC:

We are also part of the Management Committee [YBRMC] where we have contact with other nationalities and institutions. During our meetings we discuss with everybody what is happening in the Biosphere Reserve, who is doing what and what steps we have to take to deal with problems it faces. We have annual plans (POAs) where we define our priorities, plan activities and define our responsibilities. It is an important space for all of us in the region to meet, confront problems and search for solutions (Government Representative, #3).

The Yasuni Management Committee is a unique participatory space in Ecuador. It is officially recognized by the government and led by the Ministry of Environment. It is a place where people who are involved in the management of the region, on different levels, can get together, plan, discuss, argue and impact on the development and conservation decisions. Sometimes it is hard to move things forward, but at least we try to do things. We need this space. We even ask oil companies to come, but they don't participate (Government Representative, #7).

The role of the Management Committee as a participatory space for indigenous groups was also addressed during interviews with NGO employees:

I think that the Waodani participate about 90 percent within the Committee. They are mostly representatives from NAWE and AMWAE³⁸. During meetings, they are only present physically and do not get involved much in discussions [...] but sometimes only presence - being there - conveys an important message. Still, once the Waodani speak, they usually focus on crucial things. [...] I think that the idea of just to be present at meetings already represents an important achievement because it demonstrates that that Waodani recognize the Committee as a political space where they can influence what is happening within their territory [...] they definitely use it to convey their messages (NGO Representative, #11).

The active and participatory role of the Waodani within the YBRMC was especially evident during the IV Committee's Assembly which took place in August 2011. Representatives of Kichwa, Shuar, and Waodani were officially incorporated into the Committee's board of directors. At the same time, the president of the Association of Waodani Women of Ecuador (AMWAE), Manuela Ima, was elected as a representative of Civic Society within the Committee (pers.obs.). The assembly presented an important opportunity for the Waodani nationality to share their territorial concerns and discuss ideas related to multi-level collaboration with various actors present in the region (pers.obs.).

Furthermore, during a number of YBRMC meetings I attended over my six-year involvement with WCS Ecuador, I witnessed active collaboration among government workers, indigenous organizations, and representatives of the civic society. Frequently, these meetings revolved around discussing Annual Operative Plans, identifying management priorities for a given year, reviewing challenges facing the region, and presenting current and potential projects within the biosphere.

However, my own positive experiences, the philosophical principles behind the creation of YBRMC, and creating the participatory space for discussion and decision-making processes were countered by complaints coming from some of the Waodani taking part in the study. They argued, for example, that their participation in discussions with government often does not translate into having their voice count in final decision-making processes:

³⁸ AMWAE is a subsidiary organization of NAWE, representing women from the Waodani communities, focusing in part on handicraft production and commercialization as a means to improve livelihoods of Waodani communities.

Rural parish wanted to work with us on cacao project and give each family 5 ha of the cacao. But we rejected it because we have here 25 families and we would have to cut a lot of forest to grow cacao. They did not come here to consult with us about this idea and they said that we have already participated in the discussion and that this is what we wanted. We had some other ideas, but they told us that they do not have money for any other projects. We wanted projects related to fish farming and reforestation of the north area with native tree species. But, “no”, they said “only cacao and nothing more”. This is not what working together is (Participant #1.2, Batabudo).

Equally troubling is some government representatives’ tendency to view collaboration with the Waodani as a regulatory requirement to be ticked off:

Yes, sometimes they organize meetings with us but it is only because they have to demonstrate that they did something. I do not think they really listen to what we want and what our problems are (Waodani Leader, #2)

This is a concern that is reminiscent of the one found in analyzing the collaboration between NGOs and the Waodani. As in that case, creating a space for the Waodani to participate but not considering their input is antithetical to the notion of knowledge exchange and adaptive learning. Collaboration that is conducive to ACM must go beyond organizing meetings and discussing various ideas. Apart from this, there has to be an understanding among the parties that the eventual results of discussions are not predetermined. It is precisely such dissatisfaction with the centralized management style that gave rise to more adaptive and participatory co-management approaches (Berkes, 2003). After all, ACM promotes flexible and collaborative processes in which each party is a valid and relevant participant (Armitage et al., 2007, Plummer and Armitage, 2007a).

The unwillingness of the government to pay attention to indigenous people’s concerns was also noticed by other external actors:

The attitude of the government towards Waodani is still very paternalistic and it does not change with the new constitution. The decisions on how to manage the Amazon region are already made above on the political level and there is not much of the listening to the communities’ needs, ideas, or visions (Specialist, #4).

The Waodani are invited to meetings and workshops but are not given any responsibility, and they are not given space for a true participation. They are usually there more as a ‘display’ for political purposes (NGO Representative, #6).

You see that the Waodani are not really treated seriously by government people, or they are even dismissed because they are difficult to deal with. It might be that the government is just doing what they have to do by law, but it is not their real conviction to help this nationality or any other in the region (Specialist, #2).

Thus, according to some Waodani as well as external actors, the governmental approach - despite the structural commitment to change - remains marred by some of the same challenges that rendered the

centralized management approach ill-prepared for facing future uncertainties (Berkes et al., 2003; Armitage et al. 2007).

Finally, my own experiences also point to a somewhat contradictory situation, where the State's empowering and collaboration-oriented policies are hampered by their actual implementation. Ironically, it revealed itself in the context of the event aimed at facilitating indigenous participation in multilevel initiatives. This was a series of workshops with indigenous groups organized in March 2011 in Coca. I participated in these workshops which were devoted to updating the Yasuni National Park Management Plan. This was the first time that the Ministry of Environment invited Waodani residing in the Yasuni Biosphere Reserve to discuss their concerns and have them included in new strategies for park management. As a result, this event represented one of the first attempts of the Ecuadorian government to create public spaces for interactions and discussions among members of local government, civic society, and indigenous people (Painter et al., 2012).

Still, despite the significance of this event, the opportunity stemming from multi-actor interactions was not fully benefitted from. Although all the participants were sitting at one table, there was no genuine exchange of views and opinions among them. Instead, the meeting was geared towards the government's vision of what can and cannot be discussed, and it had a predetermined structure and methodology, including the type of questions to be asked. My impressions of the meeting mirror those of Judith Kimerling, a US-based lawyer with a long history of working with the Waodani group from Bamenó. In her article on the Waodani land rights, she pointed out that the Waodani from the Bamenó community felt they had not been given "any opportunity to listen and to speak about what was on their minds" (Kimerling, 2012: 247). After the meeting, the Waodani from Bamenó wrote a letter to the UN Special Rapporteur on the rights of indigenous people, James Anaya, in which they stated:

It was clear to us that the government and United Nations system want to meddle in Yasuni, but they do not understand our culture, thinking, concerns or priorities, and what is more, they do not want to understand. They do not want to engage in a serious dialogue with our communities [...] and they want to impose authorities on us (cited in Kimerling, 2012: 249)

Overall, therefore, the State's legal, political, and economic contribution to the creation of participatory and collaborative spaces in the region is not fully realized. Ingredients for making a true and lasting positive change are there, but they need to be better implemented in daily practice.

8.5.3 Funding

Funding Sustainability

As argued by Ostrom (2005), a given territory can sometimes be too large for effective management. This might be a challenge facing the Waodani SES. Collaboration and communication across communities can become exceedingly difficult in the case of the SES whose territory extends over 17,400 km² and falls within the three provinces (Section 3.2). As a result, the government needs to have adequate financial resources to be able to truly involve itself in working with local communities. Inevitably, creating space for participation, knowledge exchange, and joint decision making requires money, time, and effort. However, interviews with the State's representatives point to significant financial and logistical restrictions that have prevented them from frequent face-to-face collaboration with the Waodani:

We do not have technical capacities in our office. We do not have administrative personnel that can administer the budget and activities in our parish. I am the only one here in the office and this constitutes a huge problem for planning or implementing any activities with the communities. Even if we have an additional person, still it will not be sufficient to meet the needs of all communities in this parish. We are becoming autonomous but we have no personnel and capacities to do our job (Government Representative, #9).

We have an obligation to help the communities but, unfortunately, we can't do it because of the limited resources. There are so many communities that need our assistance but we don't have enough money to go to everyone and help them to meet their needs (Government Representative, #15).

Similar concerns were also addressed in the recent literature. Discussing the changes introduced by the new Ecuadorian constitution, García Córdova (2012) states that autonomy as a constitutional concept cannot be realized because the capacity of GADs and rural parishes continues to be low, and all the planned initiatives are constrained by scarce financial resources.

The question of funding was also addressed in the context of the Socio Bosque program:

The Socio Bosque program's money will run out soon since the government will not have money to finance this initiative in the future. For the time being, we depend on the foreign funds, but what happens when they are gone? The REDD program is not there yet to become a source of future stable funding, as the government hopes. With so many people already in the program, how can the government keep it sustainable in the long run with no concrete plan on hands? (NGO Representative, #6)

Currently, the Socio Bosque Program is entirely funded by the Government of Ecuador with additional funding coming from international organizations and other countries (Podvin, 2013; MAE, 2012a, see Section 4.4.2, Box 2). For example, Socio Bosque recently received 12 million USD from the German government (Podvin, 2013; MAE, 2012b). In addition, GIZ will contribute 28 million USD to the program over the next 5 years (MAE, 2013b). Despite these investments, contracts between communities and Socio Bosque are signed for the duration of 20 years and already - as of

December 2013 - the annual level of program's investment was \$8, 640, 709 (PSB, 2013; see Section 4.5.2, Box 2). Consequently, a long-term sustainable financing will be required to maintain and expand this incentive. Although there are projections that REDD+ will contribute to the financial sustainability of Socio Bosque (see Section 4.4.2, Box 2), achieving this goal is far from certain, since the future of REDD+ remains problematic and highly debatable in the conservational field (Seiwald, 2011). The prospect for economic rents³⁹ is expected to remain limited due to the low price of avoided emissions (or 'carbon prices') caused by the lack of a strong and binding international agreement on reducing greenhouse gases (GHG) emissions (Podvin, 2013).

Apart from being affected by the unreliability of future governmental funding, the Waodani SES is also impacted by changes to funding that has already been allocated. Indeed, on a number of occasions, funds that were designed to provide a long-term support to the SES were suddenly discontinued due to budgetary decisions and changing priorities.

We have to plan our activities on a yearly basis and we are never certain about the funding. We hire people or implement new projects, but then the budget is cut and we have to withdraw from the initiated projects or let people go. It is very hard for us to plan any activities long term (Government Representative, #10).

Our budget changes all the time and sometimes we can't promise things to communities we are working with (Government Representative #16).

The cessation of funding is, indeed, a frequent problem in assisting communities located in the YBR. For example, in 2011, Santiago Bonilla, the Director of the Yasuni National Park, was given an opportunity, for the first time, to promote the Ministry of Environment's presence and efforts within the Yasuni National Park. He received sufficient resources to hire park guards - including the Waodani - and placed them in the Yasuni Research Station located within the Yasuni National Park near the Waodani communities. Despite some initial reluctance, the park guards got involved in promoting local projects with the support of MAE. Unfortunately, in 2013, due to the State's yearly budget revision, the funding was cut, and most of the park guards were let go. In response to this, the president of Guiyedo wrote on my Facebook page: "*we have a lot of problems now, because we no longer have park guards to help us*".

As discussed in Section 2.6.7, there is usually a "one-time influx of capital" that does not translate into multi-year support (Bierbaum et al., 2013: 385). This lack of commitment to sustained long-term funding impedes the planning, implementation and evaluation of projects (Moser, 2009; Bierbaum, et al., 2013). Secure and long-term funding creates the foundation on which co-management depends

³⁹ "the value of carbon credits beyond what is necessary for covering all the costs needed to curb deforestation, including a normal remuneration for the investor" (Podvin, 2013: 68).

(Ostrom, 2005; Molly, 2012). As already discussed in relation to NGOs, the lack of sufficient continuation in project implementation can even lead to reversing gains already achieved.

On a somewhat more positive note, many governmental employees participating in the study stressed the importance of continuity in project development and implementation:

As the government we have to ensure the sustainability of processes with communities. Organizations come and go, but we stay here and we have to ensure that projects continue (Government Representative, #6).

It is important to understand that it is more difficult to work with the Waodani than with any other nationality here. The main problem with them is that many projects are implemented on a short-time basis and do not provide any continuity. It is important to develop mechanisms at the provincial level that help all organizations that work in the region in continuing their processes despite short funding. Their projects have to become an integral component of our territorial management plans where we can ensure the availability of budget for the continuation, into the future, of already initiated activities (Government Representative, #3).

These statements could be argued to have a positive undertone, since the recognition of the importance of a long-term involvement in collaborative processes is a prerequisite for fostering adaptive co-management (Armitage et al., 2009). Still, pessimism and uncertainty remain there, because, as the participants say, “*we are never certain about the funding*” and “*we can’t promise things to communities*”.

Overall, therefore, the State’s continuous reluctance to provide sufficient financial support to the region compounds the problem of the lack of sufficient NGO-related funding to further complicate the processes of implementing adaptive governance in the Waodani SES. The room to maneuver that sufficient and secure funding provides is especially needed when considering an approach to management which is based on experimentation (Armitage et al., 2007). Some co-management and adaptive learning experiments might fail, but they are still likely to provide social learning that could inform future resilience building efforts and thus make an SES better prepared to face uncertainties (Berkes et al., 2003; Folke et al., 2005). Operating in a financially-constrained environment might, however, render potential management experimental failures too politically or economically costly to incorporate into a co-management plan (Allen and Gunderson, 2011; Rist et al., 2013; see Section 2.6.7).

The lack of sustainable funding can also dissuade the Waodani from pursuing alternative management approaches in the future, which can directly impact on the feasibility of ACM initiatives. Therefore, funding cuts can undermine co-management efforts before they are given a fair chance to succeed. In the context of indigenous societies, a sudden cessation of already started projects can have a long

lasting social impact on affected communities. Raising Waodani's expectations for alternative management options - such as Socio Bosque - only to have them suddenly squashed might reinforce cynicism, suspiciousness, and the 'hunting behaviors' on part of the Waodani (Kane, 1995). They might become even more determined to pursue short-term and unsustainable livelihood options, such as commercial hunting and oil exploration, that have contributed to the possibility of the SES falling into a poverty trap in the first place (Rivas Toledo and Lara Ponce, 2001; Suarez et al., 2009). Additionally, the Waodani's suspiciousness and antagonism towards government can grow stronger and this, in turn, can additionally impact any future co-management efforts.

8.5.4 Collaborative processes on the State level

Personnel changes, inter-governmental collaboration and administrative and territorial division

Seizing the window of opportunity that seems to have emerged in the Waodani SES partly depends on having institutional and organizational structures that can remove barriers to building adaptive capacity. Supporting the human resource base and promoting stable polycentric institutional arrangements are key processes to achieving this goal (Folke et. al., Olsson et al., 2006, Section 2.5).

However, frequent personnel changes on various levels of the Ecuadorian government responsible for assisting the Waodani SES were often mentioned in the interviews:

The government struggles with the continuation of the initiated processes, because there are continuous political changes. During the past four years, we already had four park's directors, and within the last two years we had two governors. These changes on the political and institutional level affect the organization's capacity to work within the region; our projects, our relations with the indigenous people. We are constantly starting the processes all over again (NGO Representative, #8).

Government representatives change all the time. Coming and going. It is difficult to have some continuity of the processes and projects because every time somebody new comes, we have to explain the project's goal and ideas, you have to explain everything again and again (NGO Representative, #12).

These statements are consistent with my personal experiences. WCS always organizes meetings with new park directors or representatives from GADs to present projects and to plan collaborative activities. However, when a governmental employee familiar with the area is suddenly replaced, already initiated efforts need to be re-started. UNESCO's territorial planning process within the Yasuni Biosphere Reserve illustrates challenges brought about by employment instability in the region. During the first stage of the UNESCO initiative, in 2009, I took part in a number of workshops with government representatives, indigenous organizations, private sector employees, and communities. These workshops were devoted to the development of a preliminary proposal for delimitation, zoning, and territorial planning of the YBR. Two years later, a second round of

workshops was organized to approve the proposal and produce a document that would help in guiding the territorial management within the region. However, most of government representatives participating in the second round of workshops were recently hired and new to the system. They were not familiar with the earlier processes and the established zoning criteria, which required re-introducing many aspects of the project that had already been discussed and agreed upon.

In essence, both knowledge exchange and shared understanding on which ACM depends are undermined in such cases (Plummer and Armitage, 2007a, 2007b). Furthermore, a sudden change in personnel severs an already forming personal relationship between the governmental side and the Waodani people. This, in turn, can undermine the trust-building component of ACM (Borrini-Feyerabend et al., 2004: 336). This is why individual leaders and other people who have a long working history within the SES and who show familiarity with its people and problems facing them are so crucial to co-management. As already argued, these individuals can become ‘champions of change’ in promoting co-management efforts (Borrini-Feyerabend et al., 2004: 336). In the present case, they could help in assisting the Waodani through processes of building adaptive capacity needed to tackle an uncertain future. One of the Waodani leaders reiterated the importance of individual people for fostering collaboration:

ECORAE has always been changing its personnel. We worked very well with Ing. Rivera, and he was helping us a lot with the projects in the communities. He gave us transportation or was taking sick people to hospital. He always helped us when we needed it. But now there is someone else and he is not helping us because he says that there is no money in the budget (Waodani Leader, #8).

Indeed, independent of the availability of funding for technical or logistical support, individuals participating in multi-level processes remain a key to successful collaboration, especially in the indigenous context where trust, loyalty, and legitimacy are earned only with time and prolonged effort (see section 2.6.2). In this light, the frequent changes in critical co-management positions that have characterized the Ecuadorian State’s involvement in the SES could become a significant impediment to the implementation of ACM.

The findings also indicate that the level of financial and logistical support provided to the Waodani communities partly depends on the particular governmental entity that is in charge of a given portion of the overall Waodani territory. The Waodani communities which fall within a jurisdiction of an active and committed local government are likely to benefit more from multi-scale collaboration than those interacting with passive localities. Such a reality not only limits co-management options of neglected communities but could also contribute to conflicts among communities with different access to external resources:

Here we do not get much help from the parish; they never come and talk to us. Still, other communities get more help from other parishes, and this is not right, because we are all the same Waodani (Participant #1.3, Guiyedo /Timpoka).

We have problems with some parishes in Orellana that do not seem be interested in any development plans (NGO Representative #4).

Some local governments have more resources than others and financing might be different in various provinces. This will affect the development on the local level and it also defines the type of opportunities the communities can have, depending on whether they are in Orellana or Pastaza (NGO Representative, #8).

Indeed, this inequality in the access to resources and collaborative processes presents a problem for the sustainable management of the Waodani territory as a whole, because it provides some communities with a potentially greater window of opportunity than others. The problem of ‘playing favorites’ can manifest itself, which could undermine social capital and incentives for collective action on the level of the nationality (Section 2.6.3).

In addition to the differences in access to resources and in the quality of collaboration between the Waodani and governmental entities, there are also differences in the type of relationship that individual governmental institutions have with one another. In other words, the challenge related to the vertical collaboration between the State and the Waodani is accompanied by problems in horizontal collaboration among governmental employees. In Orellana, for example, the problem related to the insufficient inter-governmental collaboration was noted during individual interviews:

You need a symbiosis at different levels of the government but there is little of it. In Orellana, there are a lot of conflicts and internal political fights that do not allow for moving forward with the development (NGO Representative, #12).

The government authorities in Orellana do not want to help one another. There is no political will to resolve problems together. There should be less competing and different local governments should be trying to complement each other rather than blame each other for everything (NGO Representative, #8).

Even one of the government officials admitted the existence of the problem:

The political tensions in Orellana are historical. There is a lot of prejudice towards some of government institutions here and their responsibilities. On the other hand, there are governing bodies that want to exert their power over the province that they treat as their territory [...] there is a lot of institutional jealousy and no coordination in activities [...] What I see is that these political differences are the main factor that influences the coordination of any work that could be done within the Waodani territory (Government Representative, #1).

In contrast to this, in Pastaza, there seems to be more openness among governmental units to work together:

We follow the politics of collaboration and we do not fight with other institutions in Pastaza. On the contrary, we support each other in projects and dreams [...] We

have very close relation with the provincial government and we are very satisfied with their collaboration (Government Representative, #12).

These are all important factors in the context of the present study, since both types of linkages - horizontal and vertical - are crucial to polycentric governance (Armitage et al., 2007). A large number of active linkages in a polycentric system on both horizontal and vertical levels can enhance management diversity (Armitage et al., 2007). This, in turn, fosters mutual learning, broadens management options, keeps watch over funds distribution, and prevents unilateral or centralized thinking from taking over the processes of governance (Section 2.5.2). Strengthening government-level collaboration should accompany, therefore, efforts devoted to forging co-management relations with the Waodani.

8.5.5 State level policies

Legislative and economic framework

As argued in Section 4.4 and 8.5.2, some components of the potential window of opportunity in the Waodani SES are related to the political and legal changes introduced with the new Ecuadorian constitution. These changes signal a more active role of the State in the Waodani SES and seem to provide indigenous groups with a platform for project planning and decision-making processes regarding their territories. Furthermore, with the implementation of the revised Law of Hydrocarbons in 2010, the power of private oil companies over the Waodani people has lessened, giving thus hope of breaking the path dependency associated with *el modelo asistencialista* (Narváez Quiñónez, 1996).

However, as argued by Martinez Novo (N.d.: 22), the ‘good intentions’ of the Constitution are “contradicted by the executive decrees, secondary legislation and practices of government”. Indeed, ‘the practices of government’ are still based on oil extraction, which remains an unshakeable priority in Ecuador. From the State’s perspective “buen vivir [Good living] and development are understood as interchangeable” (Walsh, 2010: 19). The importance of oil to the Ecuadorian economy was addressed during many individual interviews:

The development in Ecuador is all about oil. The exploration is seen as the major economic engine and the politics will be revolving around this resource until it runs out (Specialist, #2).

Our economy depends on the resource extraction, and for government, oil exploration seems to be the answer to all economic problems in the country. This is will not change, while we have oil (Specialist, #1).

Indeed, in 2011, Ministry for Non-Renewable Natural Resources (MNRNR) indicated that it planned a daily extraction of 600.000 oil barrels over the next three years and announced two rounds of oil concession auctions. In June, 2011, MNRNR called an auction for 8 marginal camps in Orellana. René Ramirez, the Minister for the National Secretariat of Planning and Development, stated that

“extraction is not a political option but an economic necessity” (Cited in Wessendorf, 2011:155). Consequently, in November 2012, the government announced the 11th round of petroleum concessions that would lead to the opening-up for exploration an area of nearly 30 000 km² of the indigenous land in Pastaza and Morona (Petersen, 2012, SHE 2012, Section 3.2.2.2).

Even more recently, a shift toward sustainable development and management experimentation was given a severe blow when the President Rafael Correa, in August 2013, gave up on the innovative environmental proposal known to the international community as the Yasuni-ITT Initiative. This initiative was launched by the Ecuadorian government in 2007 and stated that Ecuador would forgo the exploitation of 850 million barrels of crude oil in exchange for obtaining contributions from the international community equaling half of anticipated revenues on the annual basis over a period of ten years (Finer et al., 2010: 63). When it became clear that donations from international community would fall short of the government’s expectations, Correa announced in his evening speech on August 15th that “the world has failed us”, and that the country needed oil to fight poverty (Bawden, 2013). Following this announcement, the Minister of Non-Renewable Natural Resources, Pedro Merizalde said:

la exploración en los bloques de la undécima ronda seguirá. El Yasuní financiará el buen vivir, pero la era petrolera continúa. / exploration of oil blocks in the eleventh round will take place. The Yasuni will finance ‘the good life’, but the oil era continues” (translated by M.B.) (El Hoy, 2013).

At the beginning of October 2013, the National Assembly approved the president’s decision of moving ahead with drilling in the Yasuni National Park that would be carried by Petroamazonas, the State oil company (Valencia, 2013).

Ironically, all these developments are taking place at the same time as the National Development Plan of Good Life 2013-2017 is putting forward an objective to “promote transformation of production matrix” to lessen Ecuador’s economic dependency on exploitation of natural resources through the development of new industries and income generating services (e.g. tourism) (SENPLADES, 2013). Thus, despite the constitutional changes and some proclamations of the current regime, oil extraction in the Waodani SES is likely to continue.

In the context of any potential ACM initiatives, this situation presents a serious challenge. Despite the implementation of the new constitution and the revised Hydrocarbons Law, the goal of breaking the culture of dependence and improving livelihoods of local people can be difficult to achieve if the underlying economic structure remains in place (Bunker, 1988). This challenge was frequently addressed in the present study:

Our government’s goal is to continue the processes of extraction of resources, regardless of their impacts on the Waodani or their environment. We can’t expect

that something will change in terms of the Waodani's way of living. It will not get any better (Specialist, #3).

The Waodani have this love-hate relationship with oil companies, but no matter what, they need revenues [...] The Waodani might protest on the streets of Quito, but then they make a turn-around and give in, because the State will force them to or because they themselves do not have many other economic alternatives (NGO Representative, #1)

As long as oil companies are here, things will not change because there will always be a group of the Waodani who want to get things from oil companies no matter what (NGO Representative, #9).

Interestingly, the above statements had been collected long before the decision about the ITT was announced. Still, following this announcement, a deep internal division within the Waodani nationality manifested itself. While many Waodani strongly oppose oil extraction, some others have been swayed by the president's promises to improve basic services and provide better education and health facilities by utilizing financial resources obtained from oil exploitation. Even within NAWE divergent views emerged, with the president of the organization supporting oil exploration and his vice-president opposing it (La Hora, 2013).

This internal division reflects, once again, the difficult position in which the Waodani have been placed because of the State's economic priorities and its ownership of the subsurface (see Section 7.3.2.2). The overriding approach aimed at continuing oil exploration makes it more difficult for the Waodani to achieve a greater level of self-determination that they were promised in the new Constitution (Asamblea, 2008: Art. 59). Paradoxically, driven by the domineering economic reality, the State would need to continue with the same processes of appeasement and short-term fixes for which the private oil companies were vilified (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001):

The government, just like the oil companies before that, prefers to give in to the Waodani just to keep them quiet. One doesn't see much difference there [...] It is difficult to change how things are managed with the oil still being the main source of income for this country. As a result, the government prefers to just give up and carry on the same practices with the nationality. This is the easiest way and not much can change if the most important thing is to keep oil flowing (Specialist, #2)

Now, the government took over from the oil companies, including the way of dealing with the Waodani. This is exactly the same strategy, just a different player (NGO Representative, #4)

The veracity of these statements is confirmed by conflicts taking place in individual communities. For example, in March, 2011, the Waodani interrupted oil exploitation activities within the Petrobell Inc. concession located in Tiwino and Batabudo and damaged company's infrastructure (El Universo, 2011, 2012b; Ministerio de Interior, 2012). Furthermore, in December 2011, they kidnapped

Petrobell Inc. workers, again paralyzing the company's activities (Diario Digital Centro, n.d.). Given the fact that under the revised Hydrocarbon Law, the oil company could no longer respond to communities' demands (El Universo, 2012b), the government had to intervene. To ensure an undisturbed continuation of oil extraction, the Ecuadorian government committed itself to housing projects and school construction in the area for a total investment of 2.4 million dollars (El Universo, 2012b ; Diario Digital Centro, n.d). Even the title of an article in El Universo (2012b) - "*Huaoranis protestaron hasta conseguir casas de \$ 32.000*" / Huaoranis protested until they received houses for \$32, 000" - reinforces the argument that external dependency remains a *modus operandi* in the Yasuni Biosphere Reserve:

Oil companies have promoted the idea that everything can be demanded and received if demanded strong enough. This principle affected the Waodani's dealings with all the other people and organizations. It is the logic that guides the Waodani's insertion into the Western world and if not deliberately changed and modified it will continue into the future (NGO Representative, #5).

In essence, when faced with the Waodani's time-tested approach for exerting demands, the State reverted to the same form of appeasement that private oil companies had engaged in (Narváez Quiñónez, 1996; Rivas Toledo and Lara Ponce, 2001; Ziegler-Otero, 2004). Therefore, in such an economic context, there is a danger that the Waodani might not let go of the mentality of dependency, but merely change the source of *abundancia* from the oil companies to the government:

We have to demand things from the government. They [the government] have to give us things, now (Participant #1.3, Batabudo).

In the end, the statement "*government took over from the oil companies*" indicates, implicitly, the 'transformation' of the State into an ultimate oil company which, in contrast to privately-owned companies, is unshakeable and overpowering because it is endowed with constitutional powers. Petromazonas, the largest State-owned oil company, operates now in 14 oil concessions and already accounts for 5 percent of the overall national oil production (El Universo, 2013a; Rigzone, 2012). Consequently, Petromazonas - along with some privately-owned companies such as Repsol and Petrobell that now have contracts with the State - became the proxy for the State within the Waodani territory. In this context, for the Waodani, challenging the oil industry and its rigid priorities becomes more daunting now than ever before (Silva, 2013).

The fading differentiation between the State and oil companies was captured in a number of collected statements:

We negotiate with Petroamazonas and they give us money to reconstruct our office and they also give us money to buy equipment including computers. If something happens in the community of Gadenó, they are over there and help to take people to hospital (Waodani Leader, #6).

Oil companies are causing a lot of problems. I have seen the agreement of Petroamazonas with NAWE. NAWE received all the money and the communities where they will be exploiting oil did not get anything [...] but NAWE already has money from REPSOL and has salaries [...] but their board of directors do nothing about helping communities. All money is spent on the NAWE's office renovation and computers, and other things. NAWE bought a car [...] Pedro and his people drive it now (Waadani Leader, #8).

Overall, therefore, the continuous interests of the State in oil exploration could continue to limit management experimentation and hypothesis-testing which lie at the heart of adaptive co-management (Armitage et al., 2007).

During one of the meetings between NAWE and MNRNR, at which I was present, a government representative openly promoted the vision of the development based on oil exploration. He said that “more exploitation means more money not only for the government but especially for you, your families and communities” (pers. obs.). The same logic was presented by President Correa in response to NAWE vice-president's criticism of the decision to move on with oil exploration in ITT:

“Quieren mantener su territorio, pero, por ejemplo, ¿no hay hospital huaorani? ¡Pónganse de acuerdo! ¿Quieren mantenerse como están o quieren hospitales? / You want to maintain your territory, but, for example, there is no hospital Huaorani? Decide. You want to stay the way you are or you want hospitals?” (translated by M.B) (El Unvierso, 2013c)

The contextual barrier related to the Waodani's dependence on oil companies that led to *modelo asistencialista* (Section 4.3.1) seems thus to persist.

Still, however, in final consideration and looking into the future, some potentially positive consequences of the emerging management context need to be noticed. Since the Ecuadorian State took over the control of oil reserves in the YBR, the current situation is not exactly the same as before, which, in light of any future ACM initiatives, offers some hope. Firstly, contrary to the oil companies, the State is likely to remain in the Waodani communities on permanent bases. The benefits of permanency associated with the State were acknowledged by some participants:

As the government, we have to ensure the sustainability of processes with communities. These are Ecuadorian citizens. Organizations come and go, but we stay here and we have to ensure that projects continue. Otherwise, this is a loss of financial resources and there is not real impact in the community. The Waodani, especially, with all their dynamics, need continuous assistance from us to accomplish any goals and see lasting results (Government Representative, #6).

Yes, in the short-term, the Waodani might replace depending on the oil industry with depending on the State. But the State has a different stake in collaborating with the Waodani. They have to develop long-term working relations with these people (NGO Representative #12).

Now the Waodani still have a passive relationship with the State, but it is in the State's interest to make them more self-reliant, responsible, and less dependent. Oil companies operated on a different principle. For them, making the Waodani dependent on them and passive was good because it meant that their presence would be needed in the communities because nobody else cared. It made negotiating easier. The government doesn't have to do that. Quite the opposite. They would probably be happy with the Waodani being able to do everything on their own and not be in their offices all the time asking for things (Specialist, #6).

The governmental sector might, indeed, have a stronger incentive to make the Waodani more self-reliant and pro-active in managing their SES than oil companies did. In the long-term, it would mean less daily assistance, less micro-managing, and fewer conflict-resolution efforts. Contrary to international oil companies that constitute a temporary presence in Ecuador, the Ecuadorian State needs to concern itself with the larger picture. This picture might, in turn, be much more beneficial to the Ecuadorian State, once the Waodani are more capable of actively co-managing their resources.

Furthermore, again contrary to oil companies, the State needs to concern itself more with the public perception of its actions (Bunker, 1988), because it could influence political processes in the Ecuadorian democratic system. With the issue of indigenous rights becoming more prominent both in Ecuador (Rival, 1994) and on the international arena, the State will eventually have to search for more innovative ways to manage the Amazon region. Therefore, an argument could be made that ACM's principles of building multi-scale co-management structures and enhancing the capacities of collaborative partners are more attractive to the State than to oil companies. As one of the government employees said:

We want to help them, sure we intervene with things, but we can't give them things as the oil companies did. This is not good for them and it is not good for us. [...] It is important to involve them more in decision making processes. They are still not there, yet, but this is our responsibility to work with them long-term and make sure that they are involved. The Amazon is an important part of Ecuador (Government Representative, #15)

That is why, although the current reality of the oil-based economy in the Waodani SES does not align itself with the premises of adaptive governance, this reality is embedded in the broader socio-political context that could eventually offer the Waodani more room for active co-management and self-determination.

8.6 HOW DOES THE ECUADORIAN STATE AFFECT CHANCES FOR FUTURE CONSIDERATION OF ACM IN THE WAODANI SES?

The Ecuadorian State's impact on the SES reveals a number of challenges to the goal of transitioning towards adaptive governance. Firstly, the governmental partner's relative lack of understanding of the SES and its cultural context affects its relations with the Waodani people. Some of the stereotypes and

dismissive attitudes with regards to the Waodani's cultural features and their management abilities persist, which not only limits the scope of collaboration efforts but also creates resentment of the part of the Waodani. In essence, although multi-level collaboration guaranteed by the constitution is nominally established, a true partnership based on knowledge exchange, mutual learning, and a genuine incorporation of the indigenous input into planned initiatives needs to be strengthened.

Furthermore, the lack of stability in staffing that characterizes the State's presence in the SES undermines trust-building, leadership, and accumulation of knowledge. Frequently, an already implemented co-management project needs to be re-started with different governmental employees in charge, who are unfamiliar with the project and with people involved in it. As a result, institutional knowledge is lost; collaborative linkages are severed; and previously initiated trust-building efforts are eroded. Moreover, the findings show that the State's collaboration with the Waodani is uneven across the SES, with some governmental localities being more engaged and pro-active than others. This situation can leave neglected communities feeling resentful and create a context where some of them are competing with one another for the same sources of funding or collaborative attention.

All these aspects are especially concerning, because some of the initiatives introduced or supported by the State offer hope of enhancing the Waodani's self-determination and fostering collaborative processes in the SES. The Hydrocarbons Law could break the Waodani's passive dependence on oil companies and could also motivate them to increase their resource management capacities. Both of these factors could, in turn, render the Waodani more inclined towards and better prepared for the adaptive co-management of their territories. Furthermore, the State's active support of Socio Bosque and providing leadership to the YBRMC show interest in fostering a more participatory and collaborative context in the region. In essence, therefore, the State's legislative agenda signals a departure from the decades-long abandonment of the Waodani, but the manner in which this agenda is being implemented on a daily basis needs to be improved.

The implementation and support of the potentially beneficial changes, programs and collaborative structures can be further undermined by funding related aspects. Firstly, funding sources allocated to the SES remain insufficient and prone to being withdrawn. Even such high-profile components of the window of opportunity as Socio Bosque are vulnerable, and its continuation over a long period of time is far from being assured. All this creates, again, a sense of uncertainty and suspiciousness, which could push the Waodani back to reliance of short-term management solution. Moreover, the very nature of ACM is based on experimentation and learning from mistakes (Berkes, 2007; Section 2.2.4.2). However, unstable and short-term funding offered by the State makes mistakes and learning from them too costly to incorporate in management principles.

Still, the current funding situation needs to be seen in comparative terms. Although financial resources allocated to the Waodani SES are insufficient, they indicate an attempt on the part of the State to lessen the Waodani's exclusive dependence on private oil companies. Indeed, for now, the projects remain insufficiently funded but the very fact that, for the first time, the State is financially invested in the SES could offer some hope for the future. Such tentative hope is especially warranted because the current generation of governmental employees shows much greater understanding and appreciation of the Waodani and their socio-economic reality. Governmental employees participating in the study are more willing to collaborate with both NAWE and individual communities, and, through their words and actions, demonstrate their awareness of mistakes done in the past and an intention to correct them. Therefore, in regards to of the State, there exists a potential for engendering a more productive multi-scale collaborative context, providing that aspects such as employment instability are sufficiently addressed. Indeed, as in the case of NGOs, it is possible that a number of concerns and complaints related to external actors' activities reflect actions and attitudes of people who are no longer involved with the Waodani SES.

Finally, the impact of the State on any future ACM initiative needs to be analyzed in the context of oil exploration that remains an economic priority in the region. Its continuation, which is now explicitly guaranteed in the new constitution, limits the scope of management experimentation and self-governance options. Although the recent legal and political changes crack the foundation of *el modelo asistencialista* and signal the State's long overdue involvement in the Waodani SES, they do not address the underlying economic structure that has prevented the sustainable management of the SES. From the perspective of some of the participants, the recent changes and developments merely replace the oil industry with the State as a provider of goods and services to the Waodani, in return for their acquiescence to the social-ecological consequences of oil exploration.

Still, however, the very fact that the State rather than private oil companies is controlling oil production and the distribution of financial resources to the local population could lead to some positive developments in the long-term. Firstly, the State's involvement in the indigenous territories makes it more directly responsible for the well-being of the indigenous people. Therefore, the neglect of indigenous rights and adherence to *el modelo asistencialista* might be more difficult and less convenient in light of media scrutiny and its effect on electoral processes.

Secondly, in contrast to oil companies, the State's intention to remain a permanent actor in the Ecuadorian Amazon creates an incentive for instilling some degree of co-management in the region. In this way, the region's challenges and socio-economic needs could be addressed on a local scale, relieving thus the State from the costly and geographically complicated daily management of the indigenous territories. Admittedly, for now, these intentions, which are underlying some of the

recently introduced legal changes, are contradicted by the State's continuous adherence to the oil-based economy. However, in the long-term, more effective co-management structures could solidify themselves in the Waodani SES, even with the government-run oil industry remaining a factor. This is an uncertain but plausible scenario, especially since the context favoring local capacity building and fostering multi-level collaboration has begun to emerge. Therefore, overall, although the challenges related to the State's impact on future implementation of ACM are currently significant, they could be partially addressed or mitigated by strengthening aspects favoring ACM that have been identified in Chapter 7 and 8 in regards to the Waodani, NGOs, and even the Ecuadorian government itself.

PART 4: SYNTHESIS, RESEARCH CONTRIBUTIONS AND LIMITATIONS

CHAPTER 9

WHAT IS THE OVERALL POTENTIAL FOR FUTURE IMPLEMENTATION OF ACM IN THE WAODANI SES? A SYNTHESIS

9.1 EVALUATION OF THE OVERALL POTENTIAL FOR ACM IN THE WAODANI SES

The final objective of the study relates to determining the overall potential for implementing ACM in the Waodani SES, given the opportunities and challenges emerging from the above analysis of the Waodani, NGOs, and the Ecuadorian State. Addressing it requires an analysis of all the findings from the study, with a focus on understanding the balance and trade-offs between factors that will either facilitate or detract from any future implementation of ACM in the Waodani SES. Such an analysis in regards to each of the actors – the Waodani, NGOs, and the Ecuadorian State – was conducted in Chapter 7, 8, and 9. In this chapter, I will bring major findings from these chapters together in order to arrive at a more holistic and comprehensive picture.

To accomplish this, I employ the concept of adaptive governance which shares the features of ACM and is operationalized by ACM (Folke et al., 2005; Plummer et al., 2013, Section 2.5.1). Since adaptive governance has a number of underlying characteristics (Section 2.5.2), addressing these characteristics through the data related to the Waodani, NGOs, and the Ecuadorian State can shed light on the feasibility of ACM in the SES. Therefore, following the methodological framework presented in Figure 5.2 in Section 5.2, I assess the presence and interlinkages between polycentrism, participation and collaboration, self-organization and bridging organizations, and, finally, learning and innovation in the studied context (Djalante et al. 2011; Section 2.5.2). Furthermore, I describe some of the main challenges and opportunities in regards to these four characteristics of adaptive governance (Figure 9.1). Finally, I provide recommendations for helping the Waodani SES transition into adaptive governance and thus for ensuring successful implementation of ACM in the future.

The first and the most essential characteristic of adaptive governance is its polycentric structure (Djalante et al. 2011; Section 2.5.2). In the context of the Waodani SES, a considerable diversity of management structures and mechanisms have already manifested themselves. Apart from NAWÉ, NGOs, university research stations, and different levels of the government, a number of local sources of power or control exist within the SES. As the data indicate, due to egalitarianism still resonating in the Waodani nationality, local community leaders remain relatively independent from NAWÉ (Section 7.2.2.1). In addition, the recent creation of regional leadership structures supplementing

NAWE (Section 7.2.2.2) enriches the polycentric system of the SES and thus prevents unilateral decisions from taking hold. All this would suggest that the extent of management diversity is strongly conducive to adaptive governance.

However, the diversity of players within the SES needs to lead to participation and collaboration to set the stage for adaptive governance. Without these characteristics, the polycentrism in the SES exists only as a structural entity. Collaboration and participation are dependent on social capital, leadership, and mutual trust (Djalante et al., 2011). In the Waodani SES, significant challenges have emerged in relation to social capital (Section 7.2.1) and leadership (Sections 7.2.2). As argued in Section 7.2.1 and Section 7.5, in the case of the former, some communities' lower social capital reflects their lesser dependence on the forest resources and higher levels of market integration, which, as a result, can diminish their motivational drive to participate and collaborate in multi-scale co-management efforts (Figure 9.1). Indeed, collaboration and participation in the governance context that is characterized by diversity and decentralization can be more productively realized when there is a commonality of values (Shackleton and Campbell, 2001; Section 2.6.3). Still, given some Waodani communities' increasing exposure to external sources of livelihood, the task of forming participatory and collaborative initiatives that are broadly inclusive can remain a problem. Therefore, it becomes crucial to support the Waodani's economic linkages to the forest resources and their territory by promoting incentive-based initiatives such as, for example, Socio Bosque. Both NGOs and the State need to provide the Waodani with financial support and capacity building expertise that would allow them to successfully implement sustainable livelihood projects and thus become less dependent on external markets. If such external assistance is provided, the transition of the SES towards adaptive governance could be realized.

Another challenge to fostering participation and collaboration in the emerging polycentric structure stems from a relative lack of trust among the actors impacting on the SES (Sections 8.3.1 and 8.5.1; Figure 9.1). In regards to the relationship between NGOs and the Waodani, this lack of trust leads, for example, to by-passing NAWA in collaboration and even to a withdrawal from the region altogether (Section 8.3.1). Such actions not only affect collaboration and projects taking place right now, but also deepen animosity on the part of the Waodani that could influence building any future participatory or collaborative processes. The problem is further exacerbated by the State's dismissive, inconsistent, or conservative approach in collaborating with the Waodani, which makes the Waodani feel resentful and, unintentionally, brings back the memories of the decades-long neglect of the SES (Section 8.5.1). Finally, the Waodani national leaders' passivity, self-centrism, and their lack of persistence brought on by both cultural factors and *el modelo asistencialista* (Section 4.3.1.2) further undermine fostering multi-scale participation and collaboration (Figure 9.1).

In such a climate, fostering collaborative processes within the polycentric structure requires a profound shift in attitudes and approaches. Fortunately, the data also point to some positive developments. The Waodani leadership deficiencies might be mitigated by the younger generation's more active involvement in the sustainable management of the SES (Section 7.4.2) and by concrete steps, such as the introduction of the NAWA statutory rules, that have been taken to address corruption and inefficiency (Section 7.2.2; Figure 9.1). Furthermore, the greater role of Waodani women in determining the management priorities for the SES could be viewed a positive sign. Womens' concerns about the long term sustainability of the SES, and about important indicators of the well-being of the SES, such as healthcare and education services, are conducive to fostering the resilience of the SES. In this context, the efforts of NGOs to build on the emerging tendencies among the young Waodani leaders and Waodani women – such as an active and ongoing support of AMWAE - become crucial. Many interviewed NGOs' representatives expressed intentions to persist through changes, political volatility, and the Waodani's collaborative inconsistency (Section 8.3.1) by building organizational capacities and promoting local livelihood options. These efforts can, in turn, create a motivational base for strengthening social capital and collective action among the Waodani, in general. Furthermore, there is also a positive shift in views and attitudes emerging among current State employees (Section 8.5.1) that could help dispel antagonism and distrust based on the past experiences.

All these facts point to the importance of leaders as agents of change (Olsson et al., 2006; Sections 2.5.2 and 8.5.1; Figure 9.1). Emerging Waodani leaders, as well as leading figures on the part of NGOs and the State, could play a vital role in transitioning the SES towards adaptive governance. It is important to support and sustain these recent trends in leadership attitudes and thinking, especially since they are seen on different levels of the polycentric structure. It is especially vital to bring greater stability to both NGOs' and State's involvement in the SES. Providing longer and more sustainable funding to NGOs' local projects as well as ensuring greater employment stability on the level of the State leadership could enhance trust-building and mutual learning processes and thus allow the SES to meet the second characteristic of adaptive governance.

Furthermore, in this context, the next characteristic of adaptive governance - an ability to self-organize - needs to be present to a sufficient degree in the SES. Self-organization expressed through governance networks and bridging organizations could support participatory and collaborative processes taking place within the polycentric system. Governance networks create a platform to facilitate interactions among all the stakeholders within the region. In the present study, the concept of a network is represented by the YBRMC, which initially started as an informal shadow network, but eventually became a legitimate governance network due to its recognition by the Ecuadorian State in 2008 (Olsson et al., 2006; Hahn, 2011; Sections 2.5.2, 3.2.1.2 and 4.4.4).

Importantly, the YBRMC provides a joint and organized participatory space for all the actors collaborating within the polycentric structure of the SES (Figure 9.1). The Waodani are officially incorporated into its board of directors and also serve as representatives of Civic Society within the Committee (Section 8.5.2). Therefore, by interacting with external actors such as government representatives involved with the YBRMC as well as with NGOs and other indigenous groups, the Waodani can become “co-owner of the decision process that creates the sense of shared or extended accountability” (Hahn, 2011: n. pag.). Furthermore, the benefits of the YBRMC in regards to participatory and collaborative processes across various layers the polycentric structure are enhanced by the efforts of such bridging organizations as WCS (Section 8.3.3; Figure 9.1). Due to its linkages to various components of the YBRMC, WCS can facilitate mutual learning, trust building, and shared understanding between the Waodani and other actors contributing to the diversified governance structure of the Waodani SES.

These positive developments need to be contrasted, however, with a number of the identified challenges (Figure 9.1). The frequent personnel changes on various levels of the Ecuadorian State associated with the YBRMC (Section 8.5.4) could undermine building social memory into the system. Since people come and go - often taking their knowledge with them - learning fails to accumulate, which impoverishes the SES’s resilience to face future uncertainties. Constant rotations, changes, and cuts to the work force responsible for the region also diminish bridging activities of such organizations as WCS. Links and relationships are suddenly severed and need to be re-created. Furthermore, WCS’s own efforts to assist the network can also be curtailed by cuts in external funding and a retreat of donor organizations, as it was the case with USAID (Section 8.3.1). In totality, therefore, the seriousness of the identified challenges could hamper the positive developments, especially if the organizational problems associated with the external actors persist. Again, therefore, it becomes crucial to sustain and foster existing multi-scale relationships by providing a greater stability to funding and employment-related aspects of collaboration. It is a difficult challenge in the current economic context, but one that could be met through coordinated efforts on the various levels of the external component of the polycentric structure.

Finally, collaboration and participation taking place within the polycentric system should lead to learning and innovation. The underlying premise behind this characteristic of adaptive governance is that constant iterative learning, reflection, innovation, and adaptation build resilience into the SES to allow it to face future uncertainties. Firstly, on the positive side, the Waodani’s incipient institutional reorganization in relation to rules and sanctions demonstrates reflection and innovation on the part of the indigenous people (Section 7.4.2; Figure 9.1). Having experienced the social-ecological consequences of the failure to establish rules and enforceability mechanisms, the Waodani appear

ready to address the challenge by implementing zoning and mapping changes as well as by formulating rules governing resource management and sanctions to deal with corrupt leadership. The support for these changes is not universal among the Waodani, but, again, it is most prominent in the younger generation, which bodes well for the future.

Furthermore, the Waodani's willingness to try any approaches to secure their livelihood (7.4.1) lends itself to flexibility and innovation in management. Although, historically, such willingness was short-lived in a culture that tends to favor consumption over production (Section 4.3.2), the collected data show that the younger Waodani appear more willing to actively participate in co-management and persist through its stages (Section 7.4.4). Importantly, the efforts of NGOs, such as WCS, could tap into the Waodani's readiness for experimentation and learning by offering capacity-building training opportunities (Section 8.3.2) that expand the scope of management solutions to address adaptively ongoing social-ecological changes. Finally, the new institutional context ushered in by the State appears to favor experimentation. The recent legal and constitutional changes aim to lessen the Waodani's passive dependence on the oil companies, which forces the indigenous people to adapt to the reality that requires, for instance, proposal writing and self-governance (Section 4.4; Figure 9.1).

Still, there are a number of obstacles to fostering the final characteristics of adaptive governance in the SES (Figure 9.1). Willingness to invest time and learning for the purpose of adaptive resource management demands that the resource be valued enough to justify the effort (Gibson et al., 2005; 2007; Section 5.2.2.1). However, the already discussed diminishing importance of the forest resources for securing daily livelihoods in some Waodani communities (Section 7.3.1) lessens the urgency required to ensure resource sustainability through iterative learning and innovation. Moreover, pressing economic needs (Sections 4.2.1 and 4.2.2) of many Waodani render management experimentation that might or might not bear fruit in the short-term difficult to maintain. This reality is additionally compounded by the preference for consumption over production (Section 4.3.2) that still resonates among many of these hunters and gatherers. Therefore, the already addressed need to support alternative livelihood options that economically link the Waodani to their communities has to be accompanied by more immediate external assistance by the State and NGOs. This assistance would provide the Waodani with better access to educational and health services during the time when they are involved in long-term capacity building efforts and participating in experimental management approaches.

Addressing the fourth condition of adaptive governance requires, again, bringing greater stability to the funding and human resources context related to the State and NGOs. The current employment instability (Section 8.5.4) and short project duration (Section 8.3.4) could discourage reflection, iterative learning, and experimenting with revised hypotheses (Section 2.6.7). The benefits of these

approaches are evident only after a considerable period of time and require knowledge accrued throughout all stages of the process (Armitage et al., 2009). Furthermore, externally-defined priorities attached to NGOs' funding can make these organizations reluctant to adapt their efforts to local needs for the fear of veering from their contractual mandate. The same limitation to innovation and experimentation applies to representatives of the Ecuadorian State who often have to function within the constraints of externally promoted agendas. Certainly, on the positive side, many of NGOs' and the State's current employees express their understanding of the need for constant learning as well as adjusting and innovating on the basis of this learning (Sections 8.3.2 and 8.5.1). Therefore, it is essential to support mechanisms through which the concerns and views of people working in close collaboration with the Waodani could be transmitted to higher levels of external leadership. Such strengthening of knowledge transmission mechanisms could narrow the gap between the local needs and external mandates that prevents community-based innovative projects from reaching their long-term potential. Again, achieving this goal could be possible with coordinated and prolonged efforts.

Finally, the continuing economic reality of oil exploration in the Waodani SES, which still remains a priority for the Ecuadorian State (Section 8.5.5), also needs to be addressed in the context of learning and innovation in management (La Hora, 2012; Silva, 2013). This last factor, especially, could seriously impact on any future implementation of ACM in the Waodani SES. The Ecuadorian State's support of the centrally governed oil-driven economy limits the scope of experimentation and adaptation (Section 8.5.5). Furthermore, with the prerogatives of oil exploitation and exploration being written into the new constitution, opposing the oil industry or replacing it entirely with some innovative, flexible, and adaptive economic alternatives becomes more difficult than before.

Still, even though the current economic priorities in the region do not align themselves with the premises of adaptive governance, the very fact that the State replaced oil companies in daily dealings with the Waodani could have positive long-term consequences for the region. The State has a stronger incentive to promote some degree of multi-scale collaboration and management flexibility or innovation in the Waodani SES, since this would free it from enforcing top-down relationship in the context that is costly and geographically difficult to manage (Section 8.5.5). Furthermore, scrutiny that elected officials experience, especially in the context of their involvement in such internationally treasured places as the Yasuni Biosphere Reserve, makes it politically advantageous for the State to foster some degree of adaptive governance and innovation. Indeed, putting forward the ITT initiative - although it ultimately failed - shows that there might be some willingness on the part of the State to develop more innovative approaches to managing the region. Therefore, to allow for adaptive governance to manifest itself in the context of the oil-based economy, a considerable level of external pressures and media scrutiny needs to be applied to the context of the YBR. Such efforts would create a greater motivational drive on the part of the State to truly and consistently implement the latest legal

and political changes in management decentralization. Any governmental actions would need to be supported, however, by NGOs' continuous capacity building efforts with the Waodani to enable them to overcome the culture of passivity and dependence that has kept them in the poverty trap. Achieving all these goals and assisting the Waodani in transitioning towards adaptive governance, and thus ACM, could remain far from certain for a considerable period of time. Still, some of the motivational, institutional, and even cultural ingredients for accomplishing this are already there. They should be considered, because failure to do so could irrevocably place the Waodani SES on an unsustainable and destructive path.

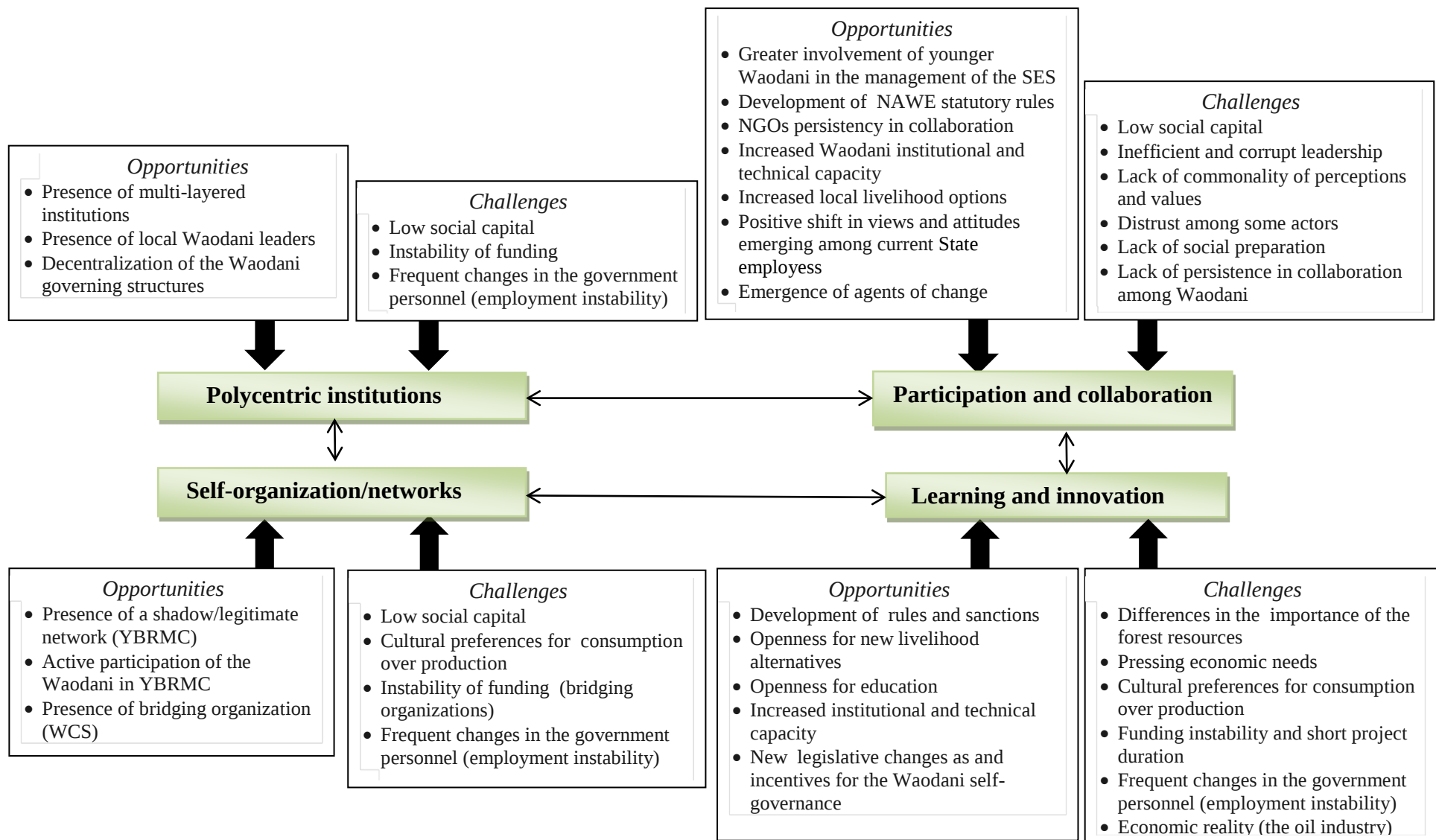


Figure 9.1 Potential opportunities and challenges for meeting the four characteristics of adaptive governance.

9.2 THE STUDY'S THEORETICAL AND PRACTICAL CONTRIBUTION AND IMPLICATIONS

When I was preparing and conducting the present study, my intention was to collect data that would provide both academic and practical contributions. Firstly, in terms of the research area, the study broadens our knowledge about indigenous groups in Ecuador and their interactions with the modern world. In this way, it builds on the previous work of such researchers as Rival (2002) and Ziegler-Otero (2004). Furthermore, the study's comprehensive approach and the inclusion of representatives of both NGOs and the Ecuadorian State in the data collection complement earlier studies that focused mostly on the Waodani's perspective (Lu and Wirth, 2011). It is a crucial contribution of the thesis given the importance of the external actors in determining the future of the Waodani SES (Narváez Quiñónez, 1996; Silva, 2013). Importantly, the current research analyzes the context of the Yasuni Biosphere Reserve and the Waodani SES in the aftermath of the profound political, legal, and economic changes following the ratification of the New Ecuadorian Constitution (2008). It thus provides data which are timely and which will allow for considering the immediate future of the SES with a greater degree of accuracy.

In this respect, a practical contribution of the study becomes evident. Since in the current economic climate obtaining funding has become even more difficult for NGOs, it is necessary to evaluate which projects might work and which might not work (Molly, 2012; Banks and Hulme, 2012). It is especially important in the case of ACM, which is a lengthy and knowledge-intensive management approach (Armitage et al., 2009). By its very nature and its focus on broad participation, ACM requires a prolong effort from both indigenous people and their external partners. The current study provides information that can help in determining the feasibility and the likelihood of success of ACM in the Waodani SES prior to its actual implementation. In this way, it can assist NGOs as well as governmental employees involved with the Waodani SES in devising strategies and in making financial and logistical decisions related to enhancing sustainability and social-ecological well-being of the SES.

Furthermore, in a broader sense, the study contributes to the research on the feasibility and implications of co-management and ACM in the context of unequal power relations. From this perspective, it relates to aspects addressed by both resilience literature and political ecology literature. As described in resilience literature, resilience is defined by normative principles of multi-level governance, shared knowledge, leadership, learning, and trust (Li, 2006; Armitage, 2008). However, political ecological interpretations reveal that a number of these normative values are actualized within in the context of specific power relations (Adger et al., 2005) and thus resilience "must be situated in the context of contested and evolving human interests and the uncertainties of human

interaction” (Armitage, 2008: 15). Even in the presence of the prescribed factors conducive to resilience, entrenched and historically determined relations, as well attitudes towards knowledge valuation and shared decision-making, can shape governance processes.

Political ecology interpretations can thus “aid to examine the underlying rationality that frames emerging governance attributes” (Armitage, 2008: 9). Paying attention to contextual power relations and mediation of power relationships across scales acknowledges and addresses the inevitable “messiness” underneath the normative or prescribed attributes of resilience (Li, 2006). That is why the present study’s in-depth examination of the political and historical power relations underpinning and influencing the multi-scale interactions in the Waodani SES offers a significant research contribution. The study explicitly examines the points of intersections between political ecology and resilience (Armitage, 2008). On one hand, it addresses the former’s preoccupation with unknownability, unpredictability, and adaptability to fluctuation in nature-society interactions (Berkes et al., 2005; Folke et al., 2005). On the other hand, it concerns itself with the degree of self-perpetuation of power relations and resource control on different scales of the system (Armitage, 2008) that can incorporate international conservation agendas, specific cultural features, and development pressures of peripheral countries.

Looking back at the study from this perspective, some insights emerge as to the conditions for ACM. If anything, the impact of unequal power relations on the implementation of ACM in those SESs in which indigenous populations interact with powerful political and economic actors should be even more emphasized in future studies analyzing the feasibility of this management approach. Therefore, such conditions as constitutional laws and economic opportunities, in relation to external actors, and leadership, in regards to indigenous people, should be afforded even more prominence in examining the likelihood of successful ACM. With the nature of power relationships being an especially salient feature in such contexts, analyzing the degree of adaptability of political and economic forces as well as the ability of indigenous leadership not to be overwhelmed by these forces becomes paramount. The present study looked at these aspects by analyzing, for example, the power dynamics in the relationship between NAWA, on one hand, and NGOs and the Ecuadorian State, on the other. Future research might build on the lessons learned here.

Furthermore, by the virtue of its investigation at a scale that is both spatially and temporarily different from many other cases of ACM found in the literature, the present study sheds more light on the challenges facing any potential ACM initiative undertaken in other indigenous contexts that are subjected to resource exploitation. As Armitage (2008: 9) argues in relation to economic activities in common pool resources, “experiences may vary by resource type and geographic location, yet there are broad commonalities including trends towards privatization of property rights, the desire of

nation-states to extract foreign exchange value by converting natural capital stocks of common resources into commodities, and the continuous growth in the international demand for products from the commons”.

The current analysis of the interplay of the various actors in the Waodani SES in the context of oil exploitation might thus have relevance in analyzing, for example, gold mining in the Amazon. In general, communities impacted by extractive processes (e.g., oil exploration or mining) differ from those that are involved in production processes (e.g., car manufacturing). The physical remoteness from the centers of power and from other important economic activities leaves extraction-dependent communities marginalized (Bunker, 1988; Kane, 1995). Interestingly, it is a reality present not only in developing countries but in the Western democracies, as well. As Bunker (1988: 29) writes, “attempts to restrict off-shore oil drilling in California, for instance, gain impetus from the density, economic articulation, and political power of the affected populations”. The prominence of this issue in national politics contrasts with the relative disregard to which the calls for environmental protection from Alaska or Appalachia are relegated (Bunker, 1988).

Furthermore, in the context of the exploitative activities carried out specifically in the Amazon jungle – be it oil exploration or mining – the present study illustrates the paradox of development undertaken in geographically remote SES. Even if the extractive activities in the Ecuadorian Amazon were somehow sustainable in long-term, they still would not lead to higher living standards for the involved population. The jungle is too vast and too overwhelming to be conquered by development. There is a paradox involved here. The extractive economy is destroying the Amazon but has no power to destroy it completely and turn it into the image of civilization. Bunker (1988: 13) describes this hubris of the modern man:

“A photograph of a bulldozer extending a reddish swath through the trees communicates the symbol of progress, while the diminute proportion of the bulldozer to its surrounding reaffirms the ultimate hopelessness of this undertaking”.

In the end, the development leaves the jungle bruised – weakened in providing its natural wealth but still not re-invented in the image of modernity. Not able to re-make the Amazon into a cluster of real cities, the extractive economy scars it only and abandons it as the dilapidated forest. The Amazon will never be tamed or turned into a metropolis, and its inhabitants will never become city dwellers. It is this reason also that renders being able to live off the forest a continuous necessity for the Waodani people as well as other indigenous nationalities inhabiting the Amazon jungle.

However, on the other hand, the analysis of the political and economic reality in the Waodani SES also points to important differences between this SES and some other indigenous SESs in South America. The relative success that the Waodani have had in both gaining international attention and

obtaining some political and legal recognition is partly attributable to the very nature of excavation activities taking place in their territories. Oil exploration is a costly and time consuming effort that only large companies can afford (Bunker, 1988). Furthermore - contrary to gold mining, for example – oil exploration involves constructing very extensive infrastructure, such as pipeline running for a number of miles.

There is a benefit embedded in this reality. Oil exploration and its detrimental effects are harder to hide from public scrutiny. No fly-by-night company can successfully engage in this type of extractive activities, which is sometimes the case with gold mines (Bunker, 1988). Large oil corporations have, in turn, their reputations to uphold and are more susceptible to the public opinion and environmental protests. As Ziegler-Otero (2004: 16) writes, the oil companies “are susceptible to pressures that would not have any effect on a tiny mining or logging operation”. The state government also needs to react because the scale of oil operations exposes oil companies’ presence in the country and political support behind them. In the end, therefore, given all those aspects, the Waodani’s long term prospects in terms of strengthening their own territorial management and maintaining their way of living might be better than those of other indigenous group affected by the extractive economy.

Furthermore, having to face large oil companies that are “able to count on unshakeable support of the Ecuadorian state” (Ziegler-Otero, 2004: 16) has turned the Waodani into brave ‘David’ fighting the powerful ‘Goliath’. This context has also helped the Waodani in attracting the interest and assistance of large environmental organizations that are especially wary and critical of the complicity between governments and large international corporations. This assistance is critical, given the vast disparity of power and resources, and is something that communities affected by mining activities face to a lesser degree (Ziegler-Otero, 2004).

In essence, therefore, the present study offers an additional twofold benefit. Firstly, it provides a number of insights that might contribute to research analysis as well as inform on-the-ground co-management approaches implemented in similar political and socio-economic contexts. On the other hand, the study points to a context-specific and industry-specific complexity inherent to co-management processes undertaken in indigenous societies that are affected by various exploitive activities. As such, it lends itself to the reflection on the differences in the nature of political, socio-economic, and international consequences that different types of exploitive activities generate.

Finally, this thesis provides a methodological contribution to studying the concept of a poverty trap in the context of barriers and a window of opportunity (Section 4.3). The study’s focus on contextual barriers related to external actors and social barriers related to resource users as well as its comprehensive and in-depth approach to analyzing a window of opportunity can broaden its

theoretical and practical applicability. The study also shows that changes or developments associated with a window of opportunity need to be unpacked and further analyzed to see if their legal, political, and collaborative intentions find substantiation in practice. Furthermore, the study reiterates the importance of underlying cultural barriers in evaluating governance and institutional barriers present in indigenous societies that participate in multi-actor collaborative initiatives. In this respect, the thesis builds on and further supports earlier research pointing to the significance of epistemological, cultural, and anthropological factors in implementing co-management in traditional societies (Section 2.6).

Finally, the study's methodological contribution also stems from the design and implementation of the methodological framework to assess both the resource users' and external actors' readiness for future consideration of ACM. The framework's comprehensive approach and its focus on interlinkages between a window of opportunity and the four characteristics of adaptive governance could assist researchers and policy makers in future evaluations of complex SESs.

9.3 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Despite its scope and a large amount of data, the study has a number of limitations. Firstly, it would be worthwhile to compare the qualitative findings obtained in the present research with quantitative data. Such a mixed method approach would allow for forming generalizations to complement the scope and depth of the qualitative research. It is also crucial to substantiate the validity of the methodological framework employed in the study. Although this framework was constructed on a basis of findings from the recent literature, its usefulness requires further verification.

Furthermore, some findings of the present study might have been affected by the way in which the data were collected. The use of the translator in some cases during the focus groups might have impacted on the flow of discussions and the accuracy of collected statements. Additionally, the use of the Spanish language also presents a possibility for a bias or inaccuracy. Although, I speak Spanish fluently, my overall ability to converse in this language is not the same as in English.

Finally, the current study reflects the social-ecological reality as well as political and economic developments in a particular moment in time. Therefore, given the volatility and precariousness of the overall context associated with Waodani SES, future research is needed to update or revise the findings presented here. I hope that such future research will build on the knowledge provided by my work to better assist all the relevant actors in enhancing the resilience of the Waodani SES to face an uncertain future. This is a task worth doing because it could help ensure the long-term sustainability of the Waodani SES and this unique ecological treasure called the Yasuni Biosphere Reserve.

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APPENDICES

APPENDIX 1: FOCUS GROUP GUIDE

The Waodani's readiness for ACM

1) Social capital

Do people in the community share Chica and other foods with other Waodani?

Follow up: more specific Wh-questions depending on the answer to the initial questions

Do people in the community participate in mingas?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do people in the community help one another during chacras or when they are sick?

- Follow up: more specific Wh-questions depending on the answer to the initial question

2) Leadership

What do you think about your national leaders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you expect from your national leaders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you trust NAWA to get and manage projects?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you think about your local leaders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you expect from your local leaders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

3) Importance of the resource

What do forest and animals mean to you?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you prefer to live in the forest, in your territory or outside, in the city?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

-

Do you think it is important for kids to learn and maintain traditional knowledge?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

-

Is the conservation of the territory, forest, and animals important?

- Follow up: more specific Wh-questions depending on the answer to the initial

4) Perception of the resource problem

Are there a lot of animals in the forest in your community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you think about oil exploration in the community and in the territory as a whole?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

5) Openness for alternative livelihoods

Do you think it is important to have various projects that bring economic resources to your community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What projects do you want to have?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you think about the Socio Bosque project?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you think about working with outsiders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

6) Openness to accept rules/ sanctions and conflict resolution mechanisms

Are there any hunting rules and regulations in the community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you think it is important to control hunting in your territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are people who do bad things and do not respect rules in the community punished?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are bad leaders punished for their behavior and actions?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Is it important to have community guards in your community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How do you resolve problems in the community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you do if you find Kichwa hunting or cutting trees in your territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

7) Openness for education

Is education important for the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you like to participate in the capacity training offered by other organizations or government?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

8) Acceptance of co-management costs

Do people go to meetings and trainings if they are not paid for it?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Should they go to meetings and trainings if they are not paid for it?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
-

When the Waodani work with outsiders on community projects, should they be paid for it?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do community guards should be paid for their work to protect your community and territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

About external actors' readiness for ACM

1) About NGOs

Do many organizations work with the Waodani and the community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations working in the community respect the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations working in the community understand the problems of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations working in the community talk and listen to the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations working in the community share their knowledge and research with the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations and people working in the community help the Waodani connect with the outside world?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do organizations working in the community involve the Waodani in their work?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
-

Do Waodani trust the organizations that work with them?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you expect from organizations working in the community and with the nationality?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

2) About the Ecuadorian State

Do government people inform the Waodani about new political changes and how important they are for the community and the nationality?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you understand how the relations between the Waodani nationality and the oil companies change after the New Constitution?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people come to visit the community?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people respect the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people keep their promises to the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do Waodani trust the government people?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people understand the problems of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people work together with the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government people listen to the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What do you expect from government to do for your community and nationality?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

APPENDIX 2: INTERVIEW GUIDE (ADJUSTED FOR EXTERNAL ACTORS AS WELL AS FOR THE WAODANI REPRESENTATIVES)

The Waodani's readiness for ACM

1) Social capital

Do you think that there is a sense of connection and collaboration among the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you see families in the community sharing goods, food or any other benefits?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you think you can implement the project in the community for everybody to work together and share the benefits?

- Follow up: more specific Wh-questions depending on the answer to the initial

2) Leadership

How effective is NAWÉ as a leadership structure for the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What are the main problems associated with the NAWÉ governance and with the leaders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What has been your experience in working with ONHAE/NAWÉ?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What is the relationship between NAWÉ and communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

-

How do you see the role of other regional Waodani organizations and associations?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How effective are local leaders of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

3) Importance of the resource

What is the Waodani's perception of their natural resources and territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you think that the Waodani are strongly attached to living in the forest and their territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

-

How important is the traditional way of living and securing livelihood for the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How do you evaluate the younger generation and their relation/attachment to the territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

4) Perception of the resource problem

Are the Waodani aware of any animal scarcity in the communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani concerned about the numbers of animals in their communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How important is conservation for the Waodani

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani concerned about problems related to oil exploration?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What is the Waodani's attitude towards future oil exploration in their territories?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

5) Openness for alternative livelihoods

Are the Waodani open to alternative livelihood options?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani willing to experiment with new ways of living/new projects?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani willing to collaborate with outsiders?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What is your experience of working with the Waodani on projects?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani able to sustain projects that were started in their communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

6) Openness to accept rules/ sanctions and conflict resolution mechanisms

Do the Waodani have any rules and sanctions in their communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani aware of any rules and sanctions in their communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani willing to have and enforce rules and sanctions in the communities and the territory as a whole?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you think that zoning of the Waodani territory/communities can improve their territorial and resource management?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you see the Waodani as capable and efficient in resolving conflicts with Kichwa or other groups?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

7) Openess for education

In terms of education and capacity building, how prepared are the Waodani for challenges related to managing their communities and their nationality?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani willing to invest in education and capacity building?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you see the Waodani as capable of persisting through the long and demanding education process?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

8) Acceptance of co-management costs

Are the Waodani ready to cover their own costs of participating in meetings and training programs?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the Waodani ready to bear some costs of co-management?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you see the Waodani as capable to persist through long-term projects and continue them into the future?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do you see younger generation as more involved in the territorial management?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

External actors' readiness for ACM

1) NGOs

Do NGOs invite Waodani for the meetings regarding the projects with them or within their territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs working in the communities show respect for and appreciation of the Waodani and their culture?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs working in the communities understand the problems of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs working in the communities involve directly the Waodani in planning and decion-making processes?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs have understanding of the Waodani's cultural and social dynamics?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs respect the Waodani's cultural and social dynamics and their traditional knowledge?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs working in the communities share their knowledge and research with the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
-

Do NGOs working in the communities help the Waodani connect with the outside world?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
-

Do NGOs working in the communities collaborate with one another for the benefit of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
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Do NGOs working in the communities collaborate with the Ecuadorian government?

- Follow up: more specific Wh-questions depending on the answer to the initial questions
-

Do NGOs' projects are sufficiently funded to make a lasting difference in the Waodani communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs have respect for the Waodani leaders (NAWE)?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs prefer to work with communities directly?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do NGOs re-evaluate their relation with the Waodani and adjust it accordingly to make sure that projects are successful?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

2) The Ecuadorian state

Do government representatives visit Waodani communities to understand their living conditions and needs?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government always invite Waodani for the meetings regarding projects with them or within their territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives inform in an efficient manner the Waodani about things and changes that are important for the community and the nationality as a whole?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives prepare the Waodani for the transition from the 'hands' of oil companies into the 'hands' of the State?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How does government involves the Waodani in decision-making processes about the management of their territories and natural resources?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

How does government implement new laws (participative planning/budgets) in the Waodani territory?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives respect and show appreciation for the Waodani and their culture?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Is the collaboration between government and Waodani a genuine one?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives try to compensate for the past lack of State's presence in the Waodani communities?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives understand the problems of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives have an understanding of the Waodani's cultural and social dynamics?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do government representatives listen to the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do governmental representatives collaborate with each other for the benefit of the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Do governmental representatives collaborate with NGOs for the benefit of the Waodani SES?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

What are the main political or governmental or organizational issues that may affect the collaboration of the State with the Waodani?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

Are the governmental initiatives funded enough to make a lasting difference in the Waodani SES?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

-

Are the Ecuadorian government's policies supportive to co-management for sustainability?

- Follow up: more specific Wh-questions depending on the answer to the initial questions

APPENDIX 3: PILOT STUDY

Objectives

There were three main objectives behind the pilot study. Firstly, I wanted to make sure that I would feel comfortable conducting focus groups in Spanish with indigenous participants. Secondly, I intended to see if the Waodani would respond favorably to the focus group setting in which they would need to both share their views and allow other views to be presented. Thirdly, I planned to test the appropriateness and applicability of the focus group guide and determine whether I would need to make some changes to it prior to the data collection process. Finally, I used this opportunity to test the validity of the decision to divide the ACM conditions into network-based, motivation-based, and action-related conditions. Given the crucial role of this conceptual division in the creation of the methodological framework of the study, it was imperative to evaluate it prior to commencing data collection.

Participants

I chose eight Waodani from Kiwado to participate in the pilot study. Five of them were men and three of them were women. Both younger and older Waodani were enrolled. The pilot study's participants were presented with the same information and sheets as the actual research participants, but they were informed that data obtained from them would not be used in the study.

Procedure

The pilot study was conducted in the community and lasted about 90 minutes. The Waodani were sitting close to me in a semi-circle, and their responses were recorded on an electronic recording device. Through the process, I referred to a tentative focus group guide that broadly described aspects to be covered. On some occasions, while listening to the participants, I also wrote down some methodological comments that would later be used to refine the final focus group guide.

Findings

I felt comfortable during the pilot study and was able to moderate discussions and probe the participants to provide their answers to follow-up questions. My impressions were confirmed by the Waodani who said that they had enjoyed the process and considered it a valuable method of obtaining information on issues relevant to them. Importantly, they judged my approach to be culturally appropriate and sensitive to their individual views and expectations.

The pilot study also let me reconsider some of the procedures planned for the study. I realized that the Waodani might need a more direct or specific probing in regards to such aspects as the perception of the resource problem and acceptance of co-management costs (costs and benefits). These two conditions for ACM presented a difficulty for the Waodani in terms of expressing their views and attitudes. Due to these findings, I decided to set aside a greater portion of time for the two conditions during actual focus groups than I had originally intended. Furthermore, the pilot study provided some insights as the ordering of questions and topics. It confirmed my expectations that the conditions could be divided into three separate sets to be addressed in a sequential order. The participants found it easy and natural to move from discussing social cohesion to discussing leadership. They also linked in their discussions the importance of the resource with the perception of the resource problem.

Finally, the study reconfirmed by beliefs that the action-related conditions (openness for livelihood alternatives, rules and sanctions, education, and co-management costs) should be covered in the final portion of focus studies. During discussions related to these conditions the participants tended to refer back to the conditions already covered to substantiate their answers.

Overall, therefore, the pilot study gave an empirical support to the concept of dividing the ACM conditions into network-based, motivation-based and action-related conditions. This was an important finding that strengthened the rationale behind the creation of the methodological framework for my research study.

APPENDIX 4: SHORT DESCRIPTION OF THE INSTITUTIONS, MAIN ORGANIZATIONS AND COMPANIES PARTICIPATING IN THE RESEARCH

I. GOVERNMENT INSTITUTIONS

The new Constitution of 2008 and the COOTAD (Organic Code of Territorial Organization, Autonomy and Decentralization, 2010) promote the process of decentralization and devolution of powers from central government to autonomous decentralized governments (GADs) at three levels: provincial, municipal and parish. Each GADs, according to the COOTAD, has been assigned specific responsibilities out of which the main ones are listed in the table. Consequently, the Waodani have to collaborate with various levels of government depending on their needs and projects they plan to implement within their territory and communities. Below, the table summarizes the main responsibilities of GADs under the new political framework:

Responsibilities established in 2008 Constitution and COOTAD	Leves of responsibilities in GADs			
	Region	Province	Municipality	Parish
GADs responsibilities related to the poverty				
	Region	Province	Municipality	Parish
Planning and Territorial Management	x	x	x	x
Foster food security (Art. 134).	x	x	x	x
Foster productive as well as agriculture and livestock activities (Art. 135).	x	x	x	x
Provide public services (Art. 137).			x	x
Physical infrastructure and facilities for health and education (Art. 138).			x	
Preserve, Maintain and Disseminate the cultural heritage (Art. 144).			x	
Physical infrastructure, facilities and public spaces of rural parish (Art. 145).				x
Habitat and Housing (Art. 147).	x	x	x	x
GADs responsibilities related to environmental management				
	Region	Province	Municipality	Parish
Management of watersheds (Art. 132).	x	x		
Environmental management (Art. 136).		x	x	x
Provide public services (Art. 137).			x	x

Source: Grupo Faro (2009) y COOTAD (2010) and Cooperation Randi Randi(2011). Adapted by: Malgorzata Bryja

II. NATIONAL AND INTERNATIONAL NGOS AND UNIVERSITIES

1) *National NGOs*

Fundación Natura - (It was shut down after 35 years of existence in October, 2012 because of the high debt it accumulated with the Ecuadorian government)

The mission of the Fundación Natura was to promote conservation and sustainable use of the natural resources, the prevention of the environmental contamination for the improving the quality of life of local people through the process of management and environmental education. Its main area of the management included 1) the sustainable management of natural resources, 2) prevention of the contamination and environmental control, 3) environmental politics and 4) environmental education. Fundación Natura has been involved with the Waodani since 2009 through the project on the “Reduction of the illegal extraction of wildlife and the maderable products in Yasuni”. The project was financed by Agencia Española de Cooperación para el Desarrollo (AECID) and led by IUCN/Traffic. The organization’s project with the Waodani focused on the promotion of the economic alternatives in the communities of Timpoka, Guiyedo , Dikaro along the Maxus road in the Yasuni National Park and the communities of Gaden and Meñepare in the Napo Province. The organization received another funding in 2012 to work with Waodani, however, because of its financial problems with the Ecuadorian State, it ceased to exist in October, 2012. Still, its main technical group currently works with IUCN/Traffic that funds the economic projects with the Waodani nationality (see below -IUCN/Traffic)

Alejandro Labaka Foundation (Fundación Alejandro Labaka)

Alejandro Labaka Foundation was created in 2003 and its main goal is to raise awareness about the life of some of the last remaining voluntary isolated indigenous peoples in the Amazon (the Tagaeri and Taromenane clans of the Waodani). It is also involved in the continuous research and the systematization of the information related to potential threats that the group of the Tagaeri and Taromenane faces. At the same time, the Foundation works directly with the Waodani communities around the Auca road and helps them to strengthen their territorial management capacities. It is involved in the development of the group of young leaders, recuperation of their cultural values and traditions, strengthening their territorial rights and the promotion of participation of young people in various cultural events. It has a long-term commitment in the area and depends on external funds.

(See - <https://www.facebook.com/pages/Fundaci%C3%B3n-Alejandro-Labaka/206989206015611> or <http://falejandrolabaka.wordpress.com/>)

Conservation in Action Foundation

The Conservation in Action Foundation was created in 2008 by the owner of the Ecuadorian ecotourism company, Tropic Journeys in Nature. The Foundation supports several indigenous nationalities in Ecuador, including the Waodani, in their struggles to protect natural forests and their territory. It works closely with Waodani communities of Napo province where it promotes the community-based sustainable development programs such as Huaorani Ecolodge (in Kewediono), trains nature guides, holds workshops to improve the quality of crafts and supports the Waodani in their search for sustainable financing to improve their livelihoods. The funder of the Foundation has a long history with the Waodani nationality. The Foundation initiated its first tourism operations in the community of Kewediono in early 1990s and formed its tourism company Tropic Journeys in Nature in 2004 (see <https://www.ecotourism.org/tropic-journeys-in-nature>).

Fondo Ecuatoriano Populorum Progressio (FEPP)

FEPP is a non-profit, private foundation created in 1970 by a group of bishops, priests and secular people. It has a social focus and promotes integral development for poor and marginalized people such as indigenous groups, male and female farmers, afro-Ecuadorians, mestizos and marginalized urban populations. FEPP helps them by offering credit, technical assistance and capacity building. FEPP works on four different topics: local development, commercialization and market access, popular finances and institutional development. FEPP does not collaborate with the Waodani nationality on the regular basis. However it provides them with some support in the agricultural and production projects. For example, in 2013 the foundation provided the Waorani men and women with the training on handicrafts production and commercialization. Representatives of FEPP interact with the Waodani nationality in the region's participative spaces created by the Yasuni Biosphere Reserve Management Committee.

(Source: <https://www.hivos.nl/dut/community/partner/10006845>, See - <http://www.fepp.org.ec/>)

2) International NGOs

Wildlife Conservation Society

Wildlife Conservation Society, or WCS, is an NGO based in New York, USA. WCS has had its office in Ecuador since 2001. It has been at the forefront of conservation in the Ecuadorian Amazon, with its main area of interest being the Yasuní Biosphere Reserve. WCS's initiatives in the region seek to reduce the pressures of human activities on natural resources through applied research, wildlife management, institutional strengthening and capacity building of local populations, and strengthening environmental governance of indigenous organizations and local governments (WCS Strategic Plan, 2013). Since 2007, with the support of USAID and the Gordon and Betty Moore Foundation, WCS has been directly involved in working with the Waodani nationality. It has worked closely with NAWA and AMWAE to build their capacities for the consolidation and sustainable management of their territories. It has a long-term commitment to the area.

(See - <http://programs.wcs.org/ecuador/en-us/aboutus/ourmission.aspx>)

The International Union for Conservation of Nature (IUCN)/TRAFFIC

In 2010, the IUCN in collaboration with TRAFFIC initiated its project on "Diminishing Illegal Wildlife Trade in the Yasuní Biosphere Reserve (YBR)". The project was funded by the Spanish Development Cooperation Agency (AECID) led by IUCN/TRAFFIC, and implemented jointly by two strategic members of IUCN: Fundación Natura and the Randi Randi Group Corporation. The project works with nine Waodani communities in two areas of the Reserve involving more than 70 families and covering 200,000 hectares of forest. It focuses primarily on working with the Waodani women (AMWAE) on promoting the alternative sources of income such as handicraft production and cultivation of fine aroma cacao. After the Fundación Natura was shut down, IUCN/TRAFFIC incorporated its employees into its management team to continue the process of direct involvement with the Waodani communities.

(See - <http://www.iucn.org/about/union/members/?7043/Finding-a-better-way>)

Food and Agriculture Organization of the United Nations (FAO)

FAO was temporarily involved with the Waodani nationality out between 2008 and 2012 by working on a project "the Conservation and Sustainable Management of Natural and Cultural Heritage of the Yasuní Biosphere Reserve". The project, also known as the Program Yasuni (Programa Yasuni), represented the joint effort of FAO, UNIFEM, UNDP, UNESCO, UN-HABITAT, UNWTO and the Ecuador Ministry of Environment. Its main goal was to demonstrate the progress towards MDG 7 by

contributing to the conservation of the area through the implementation of community-based economic alternatives. During this project, the FAO technical team was involved with Waodani women on the strengthening their capacities to manage their natural resources for the handicrafts production. FAO no longer collaborates with the nationality.

(See - <http://www.fao.org/climatechange/74460/en/>)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO has been one of the agencies that executed and implemented the Program Yasuni project. Its role was to provide the scientific and technical support to conservation and preservation of the cultural heritage of the Yasuni Biosphere Reserve (YBR). Within the project, UNESCO led the YBR land use zoning process that involved collaboration with various stakeholders within the region, including the Waodani nationality.

3) Universities

Tiputini Research Biodiversity Station of the Universidad San Francisco de Quito

Tiputini Biodiversity Station (TBS) is a scientific field research center managed by Universidad San Francisco de Quito and Boston University as a center of education, research and conservation. It was established in 1995 and is located in the Yasuni Biosphere Reserve on the northern bank of the Tiputini River. In conjunction with the Universidad San Francisco de Quito, TBS sponsors higher education opportunities for indigenous students from the Amazon region, including the Waodani nationality. The USFQ and its research center has also been promoting environmental education programs and local ecotourism activities with the Waodani communities of Guiyedo and Timpoka within the Yasuni.

(See - <http://www.usfq.edu.ec/Tiputini/Conservation/Paginas/ScholarshipPrograms.aspx>, http://en.wikipedia.org/wiki/Tiputini_Biodiversity_Station)

The Yasuni Research Station (YRS) of the Pontificia Universidad Católica del Ecuador (PUCE)

The Yasuni Research Station (YRS) was created by the Ecuadorian government on August 25, 1994. The government subsequently assigned management and administrative duties to the Department of Biological Sciences, Pontificia Universidad Católica del Ecuador (PUCE), for ninety-nine years (Pearson, 2010). The YRS forms part of the Yasuni National Park (YNP) and is located at the right bank of the Tiputini River in near proximity to the Waodani communities of Guiyedo and Timpoka along the Maxus Road (~ 10km). Visitors and researchers that stay at the Station are primarily international graduate students or undergraduate students from PUCE.

(See - <http://www.yasuni.ec/inyasuni.php?c=43>)

III. OIL COMPANIES and CONSULTING COMPANIES

Private owned Repsol-YPF, Petrobell, Inc and the State operated the Petroamazonas EP are three main oil companies that are currently operating within the Waodani territory and within the Yasuni National Park where Waorani communities are located.

REPSOL-YPF

The Spanish consortium Repsol - YPF took over management of the Block 16 from MAXUS Inc. in 1996. One of his first decisions was to assume all the commitments that had been accepted by

MAXUS in 1992 under the "Agreement of Friendship, Respect and Mutual Support among the Waorani communities and Maxus Ecuador Inc." signed in 1993 for 20 years. REPSOL-YPF's block 16 encompasses the Waodani communities of Guiyedo, Timpoka, Dikado, Peneno, Yedentado and Gabado. Since 1993, it has supported NAWE and other Waodani communities in the area of education, health and local development.

PETROBELL Inc.,

PETROBELL Inc is a subsidiary of Brazil's Petrosynergy oil company that, in 2002, started its operations in the marginal block that encompasses two Waodani communities of Batabudo and Tigüino. In contrast to Repsol-YPF, it never signed a direct agreement with the ONHAE (NAWE) but directly with Batabudo and Tigüino. Up to 2010, when the changes in the Hydrocarburos Law took place, the company provided the communities with the health and education services. It has been also the main source of the employment and consequently income for these two communities (see http://www.synergypacifico.com/index-6.html_)

PETROAMAZONAS EP.

Petroamazonas was created to operate the oil fields formerly owned by Occidental Petroleum Co. (OXY). In October 2012, Petroamazonas, after merging with Petroecuador, became a state-owned oil company in charge of exploration-and-exploitation activities. Currently, it is operating the oil field (Block 21 and 31) formerly run by the Anglo-French company Perenco Corp in the Waodani communities located in the Napo province. It will be also in charge of oil exploration activities within the Yasuni-ITT region (Block 43).

Cardno-ENTRIX (formely ENTRIX)

ENTRIX is a professional U.S. environmental and natural resource management consulting company that was acquired in 2010 by Cardno Limited. It specializes in Water Resources Management, Natural Resources Management, Permitting & Compliance, Environmental & Natural Resource Liability Management, Economics and Decision Sciences, and Health Sciences (see <http://www.cardnoentrix.com/>). ENTRIX was contracted by Maxus, Petrobras and later by Repsol-YPF in 1990s to negotiate the environmental and financial aspects with the Waodani nationality. Over the years, the company has, thus, developed a strong relationship with the NAWE, Waodani leaders and communities. The company has also conducted two main diagnostics on socio-economic situation of the Waodani communities located in the Repsol-YPF concession (block 16).

APPENDIX 5: CODING OF THE PARTICIPANTS IN THE FOCUS GROUPS

Below, there is a list of participants for each focus group which also shows how these participants were coded and presented in the the thesis. For instance, one of the participants from the community of Guiyedo or Timpoka who participated in the first focus group is described as *Participant #1.1, Guiyedo /Timpoka*, while the participant from the Kiwado community from the second focus group is referred to as *Participant #2.1, Kiwado* in the thesis.

Guiyedo /Timpoka (1st group) 13.09.11

Participant #1.1, Guiyedo /Timpoka
Participant #1.2, Guiyedo /Timpoka
Participant #1.3, Guiyedo /Timpoka
Participant #1.4, Guiyedo /Timpoka
Participant #1.5, Guiyedo /Timpoka
Participant #1.6, Guiyedo /Timpoka

Guiyedo /Timpoka (2nd group) 14.03.12

Participant #2.1, Guiyedo /Timpoka
Participant #2.2, Guiyedo /Timpoka
Participant #2.3, Guiyedo /Timpoka
Participant #2.4, Guiyedo /Timpoka
Participant #2.5, Guiyedo /Timpoka
Participant #2.6, Guiyedo /Timpoka

Kiwado (1st group) 20.06.2011

Participant #1.1, Kiwado
Participant #1.2, Kiwado
Participant #1.3, Kiwado
Participant #1.4, Kiwado
Participant #1.5, Kiwado
Participant #1.6, Kiwado

Kiwado (2nd group) 08.09.2011

Participant #2.1, Kiwado
Participant #2.2, Kiwado
Participant #2.3, Kiwado
Participant #2.4, Kiwado
Participant #2.5, Kiwado
Participant #2.6, Kiwado

Batabudo (1st group) 20.03.12

Participant #1.1, Batabudo
Participant #1.2, Batabudo
Participant #1.3, Batabudo
Participant #1.4, Batabudo
Participant #1.5, Batabudo
Participant #1.6, Batabudo
Participant #1.7, Batabudo

Batabudo (2nd group) 05.07.12

Participant #2.1, Batabudo

Participant #2.2, Batabudo

Participant #2.3, Batabudo

Participant #2.4, Batabudo

Participant #2.5, Batabudo

Participant #2.6, Batabudo

APPENDIX 6: CODING OF THE PARTICIPANTS IN INDIVIDUAL INTERVIEWS

Below, there is a list of participants from the external actor groups (government, NGOs, oil companies, specialists and Waodani leaders). The information on 1) type or name of institution or organizations, 2) the general position that participants holds within this institution or organizations, 3) interview date and 3) the code used to represent participants in the thesis. For instance, one of the participants from a governmental institution who was interviewed was described as *Government Representative #1...X* while the participant from NGO is coded as *NGO Representative #1...X*.

INSTITUTION OR ORGANIZATION	POSITION OF THE PARTICIPANT	INTERVIEW DATE	CODE
GOVERNMENT INSTITUTIONS			
Provincial Provincial Autonomous Decentralized Government of Orellana	High-ranking representative of the Provincial Directorate of Environment <i>(Dirección Provincial del Ambiente)</i>	22.09.11	Government Representative #1
	High-ranking representative of the of Department of Productive Development <i>(Departamento de Fomento Productivo)</i>	19.09.11	Government Representative #2
	High-ranking representative of the of Department of Environmental Management in Orellana	19.09.11	Government Representative #3
Provincial Autonomous Decentralized Government of Pastaza	High-ranking representative of the of the Department of Sustainable Development	24.05.11	Government Representative #4
	High-ranking representative of the of Ministry of Tourism	10.10.11	Government Representative #5
Municipality Municipal Autonomous Decentralized Government of Orellana	High-ranking representative of the of Department of Participation and Development	21.09.11	Government Representative #6
	High-ranking representative of the of the Department of Environmental Management	22.09.11	Government Representative #7
Municipal Autonomous Decentralized Government of Pastaza	High-ranking representative of the of Arajuno Municipal Directorate	16.11.11	Government Representative #8
Rural Parishes Parish Autonomous Decentralized Government of Orellana	High-ranking representative of the of the Alejandro Labaka Parish	20.09.11	Government Representative #9
	High-ranking representative of the Inés Arango Parish	14.03.12	Government Representative #10

	High-ranking representative of the of the Dauyma Parish	14.03.12	Government Representative #11
Parish Autonomous Decentralized Government of Pastaza	High-ranking representative of the of Curaray Parish	11.10.11	Government Representative #12
National / Regional Ministry of Environment	High-ranking representative of the of Yasuni National Park	12.03.12	Government Representative #13
Socio Bosque Program	Representative of Socio Bosque Program	27.03.12	Government Representative #14
ECORAE	High-ranking representative of the of ECORAE for Orellana	21.09.11	Government Representative #15
ECORAE in Pastaza with the emphasis on the Amazon region	High-ranking representative of the of ECORAE in Pastaza	10.10.11	Government Representative #16
ECORAE - CTEA	High-ranking representative of CTEAS.	15.11.11	Government Representative #17
NON-GOVERNMENT INSTITUTIONS			
Universities			
Pontificia Universidad Católica del Ecuador (PUCE) Yasuni Scientific Research Station	Representative of the Research Station Management team	29.05.11	NGO Representative #1
Universidad San Francisco de Quito (USFQ) Tiputini Biodiversity Research Station	Representative of the Biological and Environmental Science College team and the Tiputini Biodiversity Research Station management team	20.01.12	NGO Representative #2
National			
Ecuadorian Populorum Progressio Fund (FEPP)	Representative of the Yasuni Biosphere Reserve project team	15.09.11	NGO Representative #3
Fundacion Alejandro Labaca	Representative of the Waodani Education Project	20.09.11	NGO Representative #4
Fundacion Natura	Representative of Fundacion Natura's Waodani project team	16.01.12	NGO Representative #5
Conservation in Action Foundation	Representative of the management team	20.02.12	NGO Representative #6

International			
Wildlife Conservation Society	Representative of the management team	15.11.11	NGO Representative #7
Wildlife Conservation Society	Member of the technical team	22.09.11	NGO Representative #8
Wildlife Conservation Society (with AMWAE)	Technical Coordinator within the Management of Indigenous Lands Project	10.10.11	NGO Representative #9
Wildlife Conservation Society (with NAWA)	Technical Coordinator within the Territorial Management of Indigenous Lands Project	17.11.11	NGO Representative #10
UNESCO	Representative of the UNESCO Natural Sciences Sector	17.01.12	NGO Representative #11
FAO	Representative of the management team	19.09.11	NGO Representative #12
IUCN/TRAFFIC	Representative of the management team	15.10.11	NGO Representative #13
Oil companies and oil consulting companies			
REPSOL-YPF	Representative of the management team of the Community Relations Department	13.05.11 and 6.02.12	Oil Company Representative #1
	Coordinator of the Community Relations	6.12.11	Oil representative #2
ENTRIX	Representative of the Management Team that is hired by REPSOL-YPF	18.05.11	Oil Company Representative #3
PETROBELL INC.	Representative of the Community Relations Department	27.03.12	Oil Company Representative #4
PETROAMAZONAS EP	Representative of the Community Relations Department	29.03.12	Oil Company Representative #5
Specialists/Academic Researchers/Individuals working with Waodani			
AGIP oil company	Sociologist	27.01.12	Specialist #1
Dikado Waodani College	College Funder and Professor	4.07.11	Specialist #2

IUCN	Anthropologist	4.07.11	Specialist #3
FLASCO	Anthropologist	13.09.11	Specialist #4
FLASCO	Professor/Anthropologist	16.06.11	Specialist #5
NAWE	Long-term NAWA advisor and technician	25.05.11	Specialist # 6
Waadani Leaders			
NAWE	Representative of NAWA leadership	11.10.11	Waadani Leader #1
NAWE	Representative of the NAWA Territorial Management Team	12.02.12	Waadani Leader #2
NAWE	Representative of the NAWA technical team	16.09.11	Waadani Leader #3
NAWE	Former NAWA Vice-President	11.10.11	Waadani Leader #4
NAWE	Former NAWA President	25.05.11	Waadani Leader #5
NAWE	Former NAWA President and the representative of the organization of Council Of Waadani of Pastaza (CNWP)	12.10.11	Waadani Leader #6
NAWE	Representative of the NAWA technical team	13.02.12	Waadani Leader #7
ONWO	The representative of ONWO	13.03.11	Waadani Leader #8
ONWAN	The representative of ONWAN	14.02.12	Waadani Leader #9
AMWAE	Representative of AMWAE management team	10.10.11	Waadani Leader #10
AMWAE	Representative of AMWAE management community relation team.	10.10.11	Waadani Leader #11

APPENDIX 7: CONSENT FORMS

Consent form: (SpanishVersion)

Autorización

Yo deseo formar parte de este estudio. He leído la hoja de información y comprendo que cualquier información que yo proporcione será confidencial y será usada solo con el propósito de este estudio. También entiendo que puedo anular mi participación en cualquier momento. En este caso mi información será cancelada.

Nombre: _____

Firma: _____

Consent form: (English translation)

Consent form

Yes, I am willing to take part in this research study. I have read the consent form and I understand that any information I give will remain confidential and be used only for the purpose of the research study. I also understand that despite giving this consent, I can withdraw from the study at any time and have my data removed

Name: _____

Signed: _____