Technische Universität Dresden

Faculty of Environmental Sciences

Linking indigenous territorial autonomy and environmental sustainability: a case study of the *resguardo El Duya* in Colombia.

Doctoral dissertation for obtaining the degree of:

Doctor rerum naturalium (Dr. rer. nat.)

Submitted by:

Diana Alejandra Jiménez-Montoya. Born on 14.11.1982 Armenia, Quindío, Colombia

Reviewers:

Prof. Dr. Dr. h. c. Bernhard Müller, Technische Universität Dresden, Germany

Prof. Dr. Annika Mattissek, Albert-Ludwigs-Universität Freiburg, Germany

Prof. Dr. habil. Norbert Weber, Technische Universität Dresden, Germany

Date of oral defence**:** 17.03.2021

May 2021

Declaration of conformity

I hereby confirm that this copy conforms with the original dissertation on the topic:

Linking indigenous territorial autonomy and environmental sustainability: a case study of the *resguardo El Duya* in Colombia.

May 2021

Jiménez-Montoya, Diana Alejandra

Declaration of Authorship

I, Diana Alejandra Jiménez-Montoya, declare that this thesis titled, 'Linking indigenous territorial autonomy and environmental sustainability: a case study of the *resguardo El Duya* in Colombia' and the work presented in it are my own. I hereby assure that:

1. I have produced the present work without inadmissible help from third parties and without aids other than those stated; ideas taken directly or indirectly from external sources are identified as such.
2. When selecting and evaluating the material and also when producing the manuscript, I have received no support from other persons.
3. No further persons were involved in the intellectual production of the present work. In particular, I have not received help from a commercial doctoral adviser. No third parties have received monetary benefits from me, either directly or indirectly, for work relating to the content of the presented dissertation.
4. The work has not previously been presented in the same or a similar format to another examination body in Germany or abroad, nor has it been published.
5. I acknowledge the doctoral regulations of the Faculty of Environmental Sciences of the Technische Universität Dresden

May 2021

Diana Alejandra Jiménez-Montoya

Acknowledgement

This research has been supported by a scholarship provided by the Dresden Leibniz Graduate School (DLGS) from 03.2017 to 02.2020. Thanks to the frame of the DLGS program, I had access to academic and institutional structures that were crucial for the completion of this dissertation. Therefore, I would like to express my gratitude to those who generously contributed to this journey.

I would like to thank Prof. Dr. Dr. Bernhard Müller for guiding me through the journey of pursuing a doctoral degree. During these three years of his supervision, I had the opportunity to learn from his academic rigorousness, to strengthen my argumentation according to his example and to count on his decisive support to complete this dissertation.

I am deeply grateful to Prof. Dr. Annika Mattissek for her crucial support on the process of evaluation of my doctoral dissertation. I deeply appreciate her early interest on my research and her generosity to share her academic perceptivity concerning my work.

I am grateful to Prof. Dr. habil. Norbert Weber for his participation in the evaluation process and his sharp remarks when discussing my work. I value his interest in reading and commenting my dissertation in detail.

I would like to thank Dr. Paulina Schiappacasse for her the guidance and support, whose scientific advice helped me strengthen the theoretical foundations of this research. As well, I would like to thank Sabine Scharfe and Sarah Strugale who went beyond providing much needed logistic support on behalf of the program and shared their knowledge and experience with me and the other colleagues of DLGS. Special thanks to Prof. Dr. Marcel Thum and other members of the DLGS management board who provided valuable comments during academic events. I would like to thank my colleagues from DLGS 4, 5, 6 and 8 for their support, their input and their friendship. Their experiences and knowledges constitute the most valuable asset from the program.

I would like to thank the staff of the Leibniz Institute of Ecological urban and regional development (IOER) in Dresden. Special thanks to Andreas Blum for his mentoring and remarks, especially during autumn schools along with Dr. Juliane Albrecht. Thanks to Sabine Witschas, Evi Rockstroh, Anja Pohl and all the staff members who diligently helped me in every aspect I needed.

I would like to express my deepest gratitude to the Salia people and all the persons in Colombia without whose help this dissertation would not have been possible. My deepest gratitude to *Don* Ismael and the counsellors of ASAISOC; Clara, Damaris and Jimmy in *El Duya* and a special recognition to the elders of *El Duya, Doña* Águeda*, Don* Octavio, *Doña* Dioselina and *Don* Julián for their generosity and support.

Finally, I would like to thank my loved ones. I would not be here without their unconditional support. Norma, Rigoberto, Ricardo, Juan Manuel, Paula, Sara, Mariana, Diana María and everyone who encouraged me through their words and thoughts. I dedicate this dissertation to all of you.

Summary

The aim of this dissertation is to understand the contributions of indigenous autonomous institutions to environmental sustainability in indigenous territories in Colombia. Past research has neglected to account for the role of indigenous territorial autonomy in spatial environmental planning and the overall goal of environmental sustainability. This gap is approached through the institutional design principles theory, informed by indigenous planning literature and the social-ecological systems framework. This research uses a case study, the *resguardo El Duya,* and a qualitative approach, where data collection was made through interviews, observation and document analysis. The results for this *resguardo* are presented in the context of *Orinoquia* region, which is analysed using the concept of frontier. This research asks about the way in which indigenous institutions mediate the relation of humans and the territory, finding that they have been going through a process of institutional change with several milestones characterised by external disturbances produced by non-indigenous actors. Currently, two institutional arrangements coexist in *El Duya*, customary and novel institutions, for which the analysis shows that the majority of design principles are present and some of them exhibit implementation problems. Thus, indigenous institutions have kept the integrity of ecosystems; despite changes in the social-ecological system and environmental impacts caused by oil extraction-related activities. This research further asks about spatial environmental planning, finding that it has been implemented by indigenous and non-indigenous actors, where the latter includes external governmental authorities and oil companies. This has resulted in an asymmetrical planning setting, in which the Salia people are deprived from significant planning powers in their territory. Furthermore, non-indigenous environmental authorities have contributed poorly in maintaining the integrity of the ecosystems of *El Duya,* under a frame in which the notion of environmental sustainability is not used by the people of this *resguardo* and is understood variably by governmental actors. Finally, this research asks about territorial autonomy concerning nature, which has been found to be partially exercised, since authority, decision-making and their enforcement are hindered by the intervention of environmental authorities. This corresponds to a jurisdictional encroachment over indigenous authorities, enabled by the Colombian State arrangement. Consequently, indigenous institutions do contribute to environmental sustainability in *El Duya*; however, this should be understood in terms of novel aspects enabled by the distinctiveness of Salia institutions and current territorial autonomy limitations.

Contents

1 Introduction 1

1.1 Rationale of the research 3

1.2 Outline of the dissertation 4

2 Indigenous territories: essentials for their study 7

2.1 The colonial inheritance 8

2.1.1 The early years and the disruption of territoriality 9

2.1.2 Republics and the enthronement of private property 10

2.2 Current state of indigenous territories in Colombia 12

2.2.1 Indigenous territorial rights in Colombia 14

2.2.2 The spatial relevance of indigenous territories 16

3 Literature review 18

3.1 Indigenous territories 19

3.1.1 The rights approach 19

3.1.2 Boundary-making and indigenous territories 24

3.2 Environmental sustainability and indigenous territorial autonomy 30

3.2.1 Subnational arrangements, self-government and autonomy 33

3.2.2 Indigenous territorial autonomy 37

3.2.3 The concept of environmental sustainability 41

3.2.4 Types of sustainability 44

3.2.5 Indigenous management of natural resources 48

3.2.6 Environmental planning in indigenous territories 57

3.3 Research questions 64

4 Theoretical framework 67

4.1 Institutional design principles 68

4.2 The social-ecological systems framework 72

4.3 Indigenous planning principles 73

4.4 Dissertation's approach 74

5 Methodology 82

5.1 Research design 82

5.1.1 Case study research 83

5.1.2 Unit of analysis and type of case study 83

5.1.3 Research design limitations 90

5.2 Methods 95

5.2.1 Document analysis 99

5.2.2 Interviews 110

5.2.3 Qualitative observations 115

6 Study area: variables in the social-ecological system framework 120

6.1 Social, economic and political settings; related ecosystems 120

6.1.1 Economic development; demographic trends; political stability; climate patterns; pollution patterns; flows into and out of focal SES 121

6.1.2 External governance systems 131

6.2 Resource systems 133

6.2.1 Sector; clarity of systems' boundaries; size of resource system; location. 133

6.2.2 Human constructed facilities 134

6.2.3 Equilibrium properties (stable state). 136

6.2.4 Predictability of system dynamics 137

6.3 Actors 137

6.3.1 History or past experiences 138

6.3.2 Number of relevant actors; socioeconomic attributes; social capital 146

6.3.3 Location; knowledge of SES (mental models) 150

6.3.4 Technologies available 150

6.4 Governance systems 152

6.4.1 Indigenous organisation; network structure 153

6.4.2 Property rights systems 154
6.5 Action situations 154
6.5.1 Harvesting; importance of resource 155
6.5.2 Information sharing 157
6.5.3 Conflicts 157
6.5.4 Investment activities 161
6.5.5 Lobbying activities 162
6.5.6 Networking activities 162
7 The relation between humans and territory 164
7.1 The period before the titling of the resguardo 165
7.1.1 Salia customary rules 170
7.1.2 Design principles in the customary arrangement 174
7.2 The period after the titling of the *resguardo* 175
7.2.1 Organisational structures 176
7.2.2 Authorities in *El Duya* 178
7.2.3 Rules for natural resources appropriation 183
7.3 Drivers of institutional transformation 193
7.3.1 Design principles in *El Duya* 199
7.3.2 Robustness of the SES 203
8 Environmental planning in indigenous territories 210
8.1 Spatial environmental planning in Colombia 212
8.2 Planning in *El Duya* 222
8.3 Oil exploration and extraction concerning *El Duya* 228
8.3.1 Projects of interest for *El Duya* 233
8.3.2 Authority over activities related to hydrocarbons 240
8.4 Environmental sustainability: multiple understandings 249
8.4.1 State view: a blurry concept 250
8.4.2 Indicators for environmental sustainability 252

8.4.3 The ecological function of property 253

8.4.4 Indigenous view: '*pervivencia*' 254

9 Autonomy over ecosystems in *El Duya* 256

9.1 Distribution of powers with regard to ecosystems in *El Duya* 258

9.2 Authority exercise over ecosystems in *El Duya* 260

9.3 Decision-making and agency over ecosystems in *El Duya* 263

9.4 Indigenous territorial autonomy in *El Duya* 266

10 Discussion of results 272

10.1 Human-nature relations in *El Duya* and institutional change 272

10.1.1 Law of origin, Mother Earth and indigenous ontologies 273

10.1.2 Salia institutions and change 274

10.1.3 Interpreting institutional design principles 281

10.2 Environmental planning: a question of institutional jurisdiction 292

10.2.1 Indigenous planning, order and territory 292

10.2.2 Salia way of planning 293

10.2.3 Looking after the territory 295

10.2.4 Indigenous jurisdiction and extractive industries 298

10.2.5 The concept of environmental sustainability in indigenous territories 300

10.3 Territorial autonomy: the need for further conceptualisation 301

10.3.1 Authority and decision-making as a component of autonomy 302

10.3.2 Indigenous territorial autonomy in Colombia 304

10.3.3 Planning and autonomy 306

11 Conclusions 309

11.1 Human relationship with the territory 309

11.2 Indigenous environmental planning 310

11.3 Indigenous territorial autonomy and nature 312

11.4 Contributions to environmental sustainability 314

11.5 Further research 316

12 References 320

13 Appendices 365

13.1 Appendix A 365

13.2 Appendix B 366

13.3 Appendix C 368

13.4 Appendix D 374

13.5 Appendix E 375

13.6 Appendix F 380

13.7 Appendix G 381

13.8 Appendix H 382

List of Tables

Table 1. Institutional design principles. 69

Table 2. Use of design principles in the literature. 71

Table 3. Key aspects for the analysis of indigenous planning. 73

Table 4. Selection criteria for the case study. 85

Table 5. Validity strategies for this dissertation. 91

Table 6. variables of the social-ecological system framework considered for data collection. 96

Table 7 Key topics addressed by specific research questions. 98

Table 8. Documents considered in the analysis. 101

Table 9. Oil exploration and exploitation blocks of interest for *El Duya*. 102

Table 10. Files reviewed for the dossiers *Garcero*-C, *Leopardo* and *Corocora*-C. 103

Table 11. Formal petitions sent to Colombian governmental agencies. 104

Table 12. Theory-based categories for coding. 109

Table 13. Areas selected for interviews. 113

Table 14. Distribution of the Salia people in *Orinoquia* region. 146

Table 15. Paid labour related to oil extraction activities. 149

Table 16. Salias' association organisational structure. 153

Table 17. Use of ecosystems and their components in *El Duya*. 155

Table 18. Sacred sites in *El Duya*. 168

Table 19. Design principles in Salia customary institutions. 174

Table 20. Current features of Salia authorities. 181

Table 21. Requirements to appropriate resources in *El Duya*. 186

Table 22. Types of prescriptions for the appropriation of natural resources in *El Duya*. 187

Table 23. Population growth in *El Duya*. 196

Table 24. Design principles in Salia institutions of *El Duya*. 200

Table 25. Salia livelihood's impact over ecosystems in *El Duya*. 207

Table 26. Environmental determinants according to law 388 (1997). 214

Table 27. Contrast between environmental determinants and ecological main structure. 215

Table 28. Strategies contained in the territorial mandate. 223

Table 29. Oil extraction-related projects in *El Duya* between 1994 and 2019. 232

Table 30. Key aspects of environmental licenses enforcement concerning *El Duya*. 241

Table 31. Oil spills reported for the projects *Garcero*-C and *Corocora*-C. 242

Table 32. State approaches to the concept of environmental sustainability. 251

Table 33. Involvement of people of *El Duya* in the projects *Garcero, Leopardo and Corocora*. 262

List of Figures

Figure 1. Dimensions of decentralisation 34

Figure 2. Power sharing arrangements 35

Figure 3. Visual representation of indigenous territories as social-ecological systems. 75

Figure 4. Theoretical approach used in this research. 77

Figure 5. Step model of inductive category development. 106

Figure 6. Step model of deductive category development. 107

Figure 7. Inductive coding of interviews. 108

Figure 8. Milestones for institutions in *El Duya* 165

Figure 9. Salia customary institutions prior to the *resguardo* 170

Figure 10. Rules in Salia customary institutions according to each level 171

Figure 11. Procedure for appropriation under customary institutions 173

Figure 12 Organisational structures in *El Duya* after titling 177

Figure 13. Customary and novel authorities in *El Duya* 179

Figure 14. Levels of rules in Salia novel institutions 192

Figure 15. Use of customary practices for agriculture in *El Duya* 199

Figure 16. Disturbances in the social-ecological system of *El Duya* 206

Figure 17. Decision-making about the need for prior consultation in Colombia 211

Figure 18. Main features of Colombia's Territorial planning hierarchy 213

Figure 19. Hierarchy in environmental determinants 217

Figure 20. Formal procedures prior to hydrocarbons exploration and extraction 229

Figure 21. Timeline of block *Garcero*-C 235

Figure 22. Timeline of block *Leopardo* 237

Figure 23. Timeline of the project *Corocora*-C 239

Figure 24. Model for analysing territorial autonomy at the *resguardo* level 258

Figure 25. Prior consultation meetings held in *El Duya* between 2007 and 2019 263

Figure 26. Application of analytical model of territorial autonomy for *El Duya* 267

List of Maps

Map 1. Overlapping of protected areas over *resguardos* 86
Map 2. *Resguardos* not overlapped by protected areas or forest reserve zones 87
Map 3. *Resguardos* overlapped by blocks in exploration and production stages 88
Map 4. Final group of r*esguardos* for selection 89
Map 5. Location of *Orinoquia* region 122
Map 6. Salia *resguardos* in the municipality of Orocué. 145
Map 7. Environmental determinants zoning for *El Duya* 218
Map 8. Enlargement of *resguardos* as proposed in 2011 and ancestral territory. 225
Map 9. Social-ecological system and territorial strategies. 227
Map 10. Hydrocarbon blocks in Colombia for 2019. 230
Map 11. Oil extraction-related environmental impacts concerning *El Duya*. 243

Abbreviations

ANH	*Agencia nacional de hidrocarburos*
	(National hydrocarbons agency)
ANLA	*Agencia nacional de licencias ambientales*
	(National environmental licensing agency)
ANT	*Agencia nacional de tierras*
	(National lands agency)
ASAISOC	*Asociación de autoridades tradicionales Sáliba de Orocué*
	(Traditional Salia authorities association of Orocué)
CBNRM	Community based natural resources management
CPR	Common pool resources
CCC	*Corte constitucional de Colombia*
	(Constitutional court of Colombia)
Corporinoquia	*Corporación autónoma regional de la Orinoquia*
	(Autonomous regional corporation for *Orinoquia* región)
DANE	*Departamento administrativo nacional de estadistica*
	(National statistics department)
DNP	*Departamento nacional de planeación*
	(National planning department)
EMP	Environmental management plan
ETIs	*Entidades territoriales indígenas*
	(Indigenous territorial entities)
ICCA	Indigenous community conserved area
IDEAM	*Instituto de hidrología, meteorología y estudios ambientales*
	(Hidrology, meteorology and environmental studies institute)
ILO	International labour organisation
INCORA	*Instituto colombiano para la reforma agraria*
	(Colombian institute for agrarian reform)
IUCN	International union for conservation of nature
LOOT	*Ley orgánica de ordenamiento territorial*
	(Organic law for territorial planning)
MPC	*Mesa permanente de concertación*
	(Permanent negotiation roundtable)
ONIC	*Organización nacional indígena de Colombia*
	(National indigenous organisation)

REDD	Reducing emissions from deforestation and forest degradation in developing countries
SESF	Social-ecological systems framework
SINA	*Sistema nacional ambiental* (National environmental system of Colombia)
UN	United Nations
UNDRIP	United nations declaration on the rights of Indigenous peoples

1 INTRODUCTION

In a world where more than half of the population lives in urban areas (UN 2014), Indigenous peoples all over the world have consistently expressed their desire to remain in their territories, most of which correspond to rural areas where ecosystems maintain good ecological conditions.

Indigenous peoples' rights and their special relation to their territories were first put forward in the international arena through ILO convention 107 in 1957. Since then, several developments have been made through multilateral instruments, such as the biodiversity convention (UN 2018) or the 2030 Agenda (UN 2019), which have highlighted the relation between Indigenous peoples and environmental sustainability. However, multilateral discussions about sustainable territorial development (ECLAC 2019) and urban-rural linkages for the New urban agenda (UN-Habitat 2017) have continued to overlook the role of indigenous autonomous territories in territorial environmental planning.

Research about Indigenous peoples has been interested in the 'potential role of indigenous forest-dwellers in counteracting tropical deforestation' (Davis and Wali 1993, 5), the role of Indigenous peoples in biodiversity conservation (Lyver and Tylianakis 2017; Mistry and Berardi 2016), and more recently, the potential of indigenous territories for climate change mitigation (Blackman et al. 2017). At the same time, researchers have explored how Indigenous peoples have been involved in territorial struggles (Escobar 2015), mainly in relation to the extraction of natural resources and transgression of their rights (Coombes et al. 2012).

This is especially important in the Latin American context, where the recognition of territorial rights of 826 Indigenous peoples have increased in the last 20 years (CEPAL 2014), along with a demand for more autonomy in their territories. The recognition of indigenous territorial autonomy occurs along a spectrum that depends on national conditions. Countries like Bolivia, Nicaragua, and Panama have recognised some indigenous territories as sub-national units; in contrast, countries like Peru and Guatemala have no autonomy regime constitutionally recognised (CEPAL 2014). In such a heterogenous context, indigenous autonomous territories are currently part of the spatial planning matrix of many Latin American countries; however, it remains unclear how these territories affect environmental sustainability.

In Colombia, the recognition of indigenous territorial autonomy has been slowly developing since 1991. Indigenous territories with collective land titles known as '*resguardos'* have been defined as entities of a special kind, formed by a territory and its indigenous institutions. The national constitution allows for the transformation of *resguardos* into subnational units provided that some legal requirements are fulfilled; however, no subnational indigenous entity has yet been created. *Resguardos* are entitled to have self-government, to create their own institutions and to exert authority over their territory, which includes the ecosystems located inside the boundaries of *resguardos*.

Focussing on the indigenous autonomy regime of Colombia, this dissertation explores the characteristics of indigenous institutions in relation to nature, the way in which environmental planning has been made, and the characteristics and the implementation of territorial autonomy concerning ecosystems and their components. This is made through a case study, where the unit of analysis corresponds to the *resguardo 'El Duya'*, located in the Eastern plains of Colombia. The analysis is made through the lens of institutional design principles (Cox et al. 2016; Ostrom 1990), adding theoretical inputs from indigenous planning (Jojola 2013), and social-ecological systems literature (Ostrom and McGinnis 2014).

Researchers concerned with indigenous autonomy have focussed on the exercise of indigenous autonomy from sociological (Augsburger and Haber 2018) and rights perspectives (Aylwin 2014b); in addition, they have focussed on problems regarding the use of natural resources, especially in the case of Nicaragua (Finley-Brook 2016; Hale 2011). However, there still is a '*lack of debate concerning the meaning of indigenous autonomy within the political system; jurisdictional, territorial and environmental planning, and the interaction of these with current state reforms'* (Ulloa Cubillos 2011, 102), which explains the scant knowledge about the effect of indigenous autonomous territories over environmental sustainability. This research gap will be addressed in this dissertation by linking three groups of literature: studies about institutional design principles for managing common pool natural resources, literature discussing indigenous planning, and studies about territorial autonomy.

1.1 Rationale of the research

The argument of this dissertation is based on four aspects:

First, the study of institutions is used as the pillar of the research. This responds to the literature review, which shows how scholars studying the interactions between humans and nature consider that it is '*more productive to focus not on communities but on institutions'* (Berkes 2004, 623), not only because of the problems regarding the connotations of the term community (Agrawal and Gibson 1999), but also because the study of human prescriptions regarding nature aims at identifying causality between what is prescribed and its outcomes. Moreover, following the recommendation made by Sandström (2009), it is acknowledged here that the selected institutional approach originates from rational choice institutionalism.

The second aspect refers to the concept of social-ecological system, which is understood as a system that is '*composed of a societal (or human) component (subsystem) and an ecological (or biophysical) component. It can be either urban or rural, and it may be defined at different scales from local to global'* (Gallopin 2001, 4). It is considered here that whenever management of natural resources is discussed, this invariably involves a reference to a biophysical unit where those resources are found. Therefore, the resources and those who manage them can be understood as a part of the same system. This means that there are internal components or subsystems, as well as external systems with which the social-ecological system interacts.

The third aspect acknowledges the ontological contradictions that have been identified in relation to environmental planning and Indigenous peoples (Escobar 2016; Howitt and Suchet-Pearson 2006; Porter 2010). Therefore, the research builds on the discussions put forward by scholars who consider this aspect. Despite such contradictions, indigenous planning is possible and desirable (Jojola 2013; Matunga 2013; Prusak et al. 2016).

The fourth aspect corresponds to the convergences between the institutional design principles for social-ecological systems and indigenous planning. On the one hand, the design principles are concerned with how actors craft institutions through collective action for the regulation of resource systems whose location is place specific. On the other hand, indigenous claims in planning are always '*territorially substantive in that they are about discrete places. They are also politically substantive in the sense of addressing questions of power, legitimacy and authority in decision making'* (Porter 2013, 290). Therefore, whenever institutional design principles and planning are discussed in relation to Indigenous peoples, there is a reference to the territory where the Indigenous people have lived. Both theoretical lines coincide with the importance of decisions being made

primarily by Indigenous peoples with regard to ecosystems and their components, which allows for discussing question of autonomy, even if scholars barely refer to it. Therefore, by discussing how Indigenous peoples establish prescriptions through rule-making and planning that are conducive to environmental sustainability, this concept can be linked to the notion of indigenous territorial autonomy.

1.2 Outline of the dissertation

The dissertation is organised in eleven chapters, starting with the current introduction. The second chapter provides information about Indigenous peoples and their territories, especially pertaining the Colombian context, which is intended to facilitate the readers' immersion in this dissertation. This chapter contains relevant definitions concerning Indigenous peoples, as well as a brief retrospection of the processes through which indigenous territories have come to their current state in Colombia. This includes a description of the emergence of *resguardos* during colonial times and its persistence until present day as a distinctive type of indigenous territory in Latin America.

The third chapter presents the literature review, which is built over three key concepts: indigenous territories, environmental sustainability and indigenous territorial autonomy. This chapter departs from reviewing theoretical approaches to indigenous territories, in order to gain knowledge about the theoretical foundations that should be considered for their study. This is based on the identification of two main approaches to indigenous territories: a focus on territorial rights and a focus on boundary-making and collective titling. Then, the review focuses on the convergences between the other two key concepts. Then, the review identifies theoretical approaches to the intersection between environmental sustainability and indigenous territorial autonomy. This includes literature concerned with human-nature research, which is clustered here in two groups: literature about management of natural resources and literature about environmental planning. This chapter includes a clarification concerning the definition of environmental sustainability and concepts that may be confused with territorial autonomy. Finally, the research questions emerging from the research gap are included at the end of the chapter.

The fourth chapter corresponds to the theoretical framework, which contains an explanation of the rationale behind the selection of the theoretical inputs used in this dissertation. This chapter begins by presenting the criteria considered to select the theory of the institutional

design principles (Ostrom, 1990) as the guiding approach in this research and the justification for using additional theoretical inputs from indigenous planning. Then, the trajectory of this theory is discussed since its early formulation until present day, including the updates that it has gone through and the social-ecological systems framework as an analytical tool for using the design principles. Finally, the tenets of indigenous planning are discussed, and the theoretical approach of this dissertation is explained.

The fifth chapter contains the methodology used in this dissertation. The first part includes a description of the research design, which discusses the characteristics of the case study, its unit of analysis and its limitations under a qualitative paradigm. The second part of this chapter describes the methods used for collecting data and analysing information. This chapter contains, as well, a reflection on methodological limitations and challenges of doing research about Indigenous peoples.

The sixth chapter presents a description of the *resguardo El Duya* as the case study, which is organised according to variables suggested in the social-ecological systems framework (McGinnis and Ostrom, 2014). This chapter describes the regional context of *El Duya* and its relevant actors and organisations. Then, the description focuses on internal aspects of *El Duya*, including an examination of the process that led to the constitution of *El Duya* as a *resguardo*. This chapter is based on primary and secondary information and constitutes a prelude for chapters six, seven and eight, which provide an answer to the specific research questions.

The seventh chapter addresses the first specific research question of this research. It describes the characteristics of the institutional arrangements in *El Duya* concerning the relation between Salias and territory. This chapter contains the results of an evaluation of the institutional design principles for the case study. This is made through the description of the rules found in *El Duya*, according to three levels of analysis: operational, collective-choice and constitutional; as well as through the identification of drivers of institutional transformation.

The eight chapter addresses the second specific research question and explains how environmental planning is made in *El Duya*. The findings presented in this chapter discuss the interaction between indigenous institutions and environmental planning, especially in relation the development of hydrocarbons-related activities since the decade of 1990 in *El Duya*. Thus, this chapter explains the way in which external actors are involved in spatial environmental planning in this *resguardo,* the traits of indigenous planning there and the contrast between indigenous and non-indigenous understandings of environmental sustainability.

The ninth chapter answers the third specific research question, through the identification of the characteristics of territorial autonomy in *El Duya*. This is made through the analysis of the distribution of powers in the territorial arrangement, as well as through the analysis of authority, decision-making and enforcement. These elements are used to produce an analytical model of indigenous territorial autonomy in *El Duya* with regard to ecosystems and their components. These findings are presented with detail, aiming at offering a rich description before proceeding to the discussion.

The tenth chapter contains the discussion of results. This chapter is organised in three sections, which correspond to the specific research questions. The discussion is presented separately from the results in order to provide a shorter and more legible perspective about the findings, than the highly-detailed results chapters. As well, this chapter includes an identification of remaining gaps despite the results of this research.

The eleventh chapter presents the conclusions of this research, by providing an answer for the general questions. This answer is achieved through the interpretation of the findings and discussion of the specific research questions concerning the theoretical approach used in this research. Thus, some reflections about the limitations of the research and potential topics for future investigation are also included.

Finally, the last two chapters, 12 and 13, contain the references and the appendices respectively, where the latter contains supplemental information to some of the chapters of the dissertation. Concerning the references, almost all of them include weblinks in order to facilitate the interest of the readers towards the sources listed.

It should be noted that this dissertation uses some terms in Spanish, sometimes indicated through parenthesis and sometimes explained through footnotes. These terms preserve the Spanish orthography. As well, it should be considered that the translation into English of from Spanish and Portuguese has been made by the author of this dissertation, except for a few cases in which the authorship of the translation is clearly indicated. As well, all maps were designed by the author of this dissertation, based on publicly accessible files and data collected in the field. All sources used to draw the maps are mentioned in them.

2 INDIGENOUS TERRITORIES: ESSENTIALS FOR THEIR STUDY

When discussing indigenous territories, a fundamental clarification must be made about who are Indigenous peoples, for which there is no universal agreement. In this context, a working definition is usually employed, arising from the United nations (UN) document known as 'Martínez Cobo study[1]' which states that:

'Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system' (UN 2009, 4).[2]

Nevertheless, applying this definition involves two concomitant aspects of the constitution of indigenous identity. The first corresponds to self-identification by the individual as an indigenous person. The second corresponds to the recognition that the collectivity provides to that individual as one of its members. Self-identification has been incorporated to national census of several countries; however, no standardised procedures are available. Moreover, some countries reject the use of the category 'Indigenous peoples. Therefore, the criteria to stablish who are indigenous persons and how many peoples are there are heterogeneous, which results in a lack of exact figures[3]. Nevertheless, indigenous populations are usually the most impoverished groups in their respective countries, with poorer life expectancy at birth, infant mortality rate; maternal mortality; child malnutrition and educational attainment (Anderson et al., 2016). In this regard, it has been emphasised that '*the recognition of Indigenous peoples as distinct*

[1] In 1981, the sub-commission on prevention of discrimination and protection of minorities of the human rights council designated the Ecuadorian José Ricardo Martínez Cobo as a special rapporteur to conduct a study about the situation of indigenous populations. The final document was the 'Study on the problem of discrimination against indigenous populations', which led to the creation of the working group on indigenous populations in 1982 (Burger 2014, 217).

[2] The study also explains the notion of 'historical continuity' with regard to occupation of ancestral lands, or at least of part of them; common ancestry with the original occupants of these lands; culture in general, or in specific manifestations (such as religion, living under a tribal system, membership of an indigenous community, dress, means of livelihood, lifestyle, etc.); language (whether used as the only language, as mother-tongue, as the habitual means of communication at home or in the family, or as the main, preferred, habitual, general or normal language); residence in certain parts of the country, or in certain regions of the world.

[3] While the UN system estimates around 370 million persons (UN 2009), some scholars estimate 30245 million (Anderson et al. 2016, 131), for example.

peoples and the respect for their individual and collective human rights is crucial for achieving a just and sustainable solution to the widespread poverty that affects them' (UN 2009, 40).

Despite some positive outcomes, the ratification of the International Labour organisation (ILO) convention 169 has not solved ongoing territorial claims across Latin America, which have been produced through social-historical processes triggered since the Spanish colonisation that continue to play a role for Indigenous peoples and are briefly described in the following section.

2.1 The colonial inheritance

In order to understand structural characteristics of current indigenous territories, the notion of 'doctrines of dispossession' (Daes 2001) is useful. This concept includes the 'Doctrine of *terra nullius'* and the 'Doctrine of discovery'. In the case of the Doctrine of *terra nullius*[4], it is considered that '*lands that were possessed by no one, or which were occupied but not being used in a manner European legal systems recognised, were empty and available for European Discovery claims'* (Miller 2011, 854). This doctrine has been used to discuss mainly the Australian case, while the Doctrine of discovery has been used more to discuss the American context:

'in the seventeenth, eighteenth, and nineteenth centuries, the doctrine of "discovery" gave to a discovering State of lands previously unknown to it, an inchoate title that could be perfected through effective occupation within a reasonable time. The doctrine, as it has come to be applied by States with little or no support in international law, gives to the "discovering" colonial power free title to indigenous lands subject only to indigenous use and occupancy, sometimes referred to as aboriginal title. Only recently has the international community begun to understand that such doctrines are illegitimate and racist' (Daes 2001, 11).

Despite independence from the Spanish crown, most republics created in the 19th century incorporated this doctrine to their legal systems, hence the emphasis of indigenous populations in territorial claims. Therefore, the following sections outline the trajectory of indigenous territories from a chronological perspective, since the early years of colonisation to their current status, in order to provide elements for understanding the relevance of studying indigenous territories in the Colombian context.

[4] The term '*terra nullius'* is a Latin expression that means *'territory belonging to no-one'* (MacInnes et al. 2017, 152).

2.1.1 The early years and the disruption of territoriality

The exploitation of indigenous labour and the appropriation of Indigenous peoples' resources took place through different stages of Spanish colonisation. During the first years, *'land appropriation was not significant due to the mobility of the conquerors, which was driven by the military campaigns aiming at the subjugation of indigenous population'* (Goyas Mejía 2015, 56). This marching over the new world lands was made through '*capitulaciones'* (Tirado Mejía 1970), which allowed its beneficiaries to distribute lands among the Spanish men that had taken part of their expeditions. The way in which land distribution took place during the first years of the colonization fostered the emergence of titling and possession problems at an early stage (Goyas Mejía 2015, 57), which would also lead to early land grabbing and land concentration processes. Therefore, the spatial occupation carried out by the conquerors and subsequent land titling was based on '*the dispossession of millions of Indigenous peoples'* (Tirado Mejía 1970, 95).

Control over indigenous populations and the utilisation of indigenous labour were of paramount importance to guarantee the Spanish rule of the conquered territories. Therefore, a key measure for controlling indigenous populations was the modification of their spatial distribution, as many Indigenous peoples used to distribute themselves in scattered spatial patterns, while others had high mobility levels. These conditions led to the creation of reductions (*reducciones)* or *pueblos de indios*[5], that is, towns created for Indigenous peoples (Muñoz Onofre 2014, 25). The spatial concentration of indigenous populations in reductions facilitated evangelisation, tax collection and access to indigenous labour force. The confinement of these populations in '*a European urban-like settlement'* (Gutiérrez Ramos 2012, 45) resulted in a further appropriation of indigenous lands, while new reductions or aggregations of *pueblos de indios* would be fostered when tax collection was below expected (Bohórquez 2002, 9).

The economic order in the 'New World' *'relied on indigenous labour force'* (Escobar Ohmstede 2014, 32), which was controlled through different regimes of exploitation. Nevertheless, the drastic reduction of indigenous population caused by wars, diseases and over exploitation of indigenous labour force (Bohórquez 2002, 6; Gutiérrez Ramos 2012, 76), fostered the dispossession of indigenous lands in those cases where large populations died (Goyas Mejía 2015, 57). In other cases, the population decrease resulted in a higher share of usable land for indigenous family units, as well as additional lands available for renting to Spanish or *mestizos,*

[5] Confinements or Indian towns. According to Gutiérrez Ramos (2012), there was an early instruction on the subject through which the Catholic Kings stablished that Indigenous peoples should *'live in towns, where each one can have a house as well as a place where they can farm the land and raise their livestock, and every town should have a church and a chaplain to indoctrinate and educate them in our holy catholic faith'* (p. 45).

which constituted a survival strategy for Indigenous peoples by providing them with another way to cover the tax burden imposed by the crown (Gutiérrez Ramos 2012, 77).

Further measures were implemented during the colonial time, which resulted in a '*compulsive restructuring of traditional communities'* (Gutiérrez Ramos 2012, 61), which produced rupture with indigenous traditions and values (Bohórquez 2002). Many Indigenous peoples were forced to transform the way the dwelled in their territories, especially in those areas with more intense interaction with Europeans.

2.1.2 Republics and the enthronement of private property

Once the foundations were laid for the control of territories and indigenous populations, areas under control of Indigenous peoples were progressively diminished. However, these dispossession processes continued in the newly created republics, in which the '*colonization of the so-called "empty spaces" by States in the nineteenth century for mainly geopolitical reasons (…) resulted in the invasion and pillaging of indigenous territories'* (Del Popolo et al 2007, 13). During the first half of the 19th century, most of the American continent went through independence wars and the creation of States. According to Murgueitio Manrique (2015), the predominant liberal ideas in these new regimes opposed Indigenous peoples' collective properties, as they were understood as '*structures remaining from the colonial period'* (p. 76). Moreover, this kind of ideas fostered the consideration of Indigenous peoples as obstacles for achieving the project of the State-nation (CEPAL 2014).

As the jurisprudence enacted by the Spanish crown lost its effect with the creation of the republics, collective rights of Indigenous peoples and their status as exclusive labour of the Crown were not valid anymore. In this context, the goal was to '*integrate Indigenous peoples as individuals into the market, private property and taxation'* (Murgueitio Manrique 2015, 76)[6]. The political frames set by these ideas resulted in multiple paths for indigenous territories, as the new States began their history as such. Therefore, the situation of indigenous territories in Latin America varies according to each national context.

[6] Laws were enacted in the new republics towards the dissolution of indigenous collective property, such as the "*Ley Lerdo*" or expropriation law (1856) in Mexico, as well as the constitution of Peru in 1823, which stated that the senate should look after the reductions in the Andes and '*promote the civilization and conversion of the infidels of that territory according to the spirit of the Gospel*' (CEPAL 2014, 23).

According to Samudio Aizpurúa (1995), the denomination *resguardo* was implemented as a policy in the Viceroyalty of *Nueva Granada* as '*communal and inalienable property'* (p. 178). This denomination only survived in Colombia. During the Spanish ruling, most of the policies implemented were based in the duality between the 'republic of Indians' (*república de indios*) and the 'republic of whites' (*república de blancos*), which fostered the spatial and social segregation of Indigenous peoples ever since (García Jimeno 2008; Gutiérrez Ramos 2012). Except for Spanish authorities, it was forbidden for other ethnic groups to stablish any kind of relationships (commercial, labour or personal) with the inhabitants of *resguardos* (Bohórquez 2002). One of the consequences of this segregation scheme was the tolerance and fostering of Indigenous peoples' internal governmental structures. Accordingly, the *república de indios* had to adopt the *cabildo*[7], a governmental structure imposed by the Spanish (Gutiérrez Ramos, 2012, p. 55).[8]

Since the creation of *resguardos,* multiple transformations took place along the three centuries of Spanish subjugation (García Jimeno 2008), most of them produced by the opposition towards the very existence of *resguardos*[9]. However, there were also different perceptions about *resguardos* from Indigenous peoples' perspective. At the beginning, they were seen as a policy to be resisted because of the violent transformation that implied for Indigenous peoples

[7] *Cabildo* is a term coined during the colonial period to designate the indigenous form of government. It had officers under the command of two authorities from the colonial State, the *corregidor de indios* and the priest (Gutiérrez Ramos 2012, 55).

[8] In colonial times, *resguardos* consisted in an exclusive compact space for indigenous populations to live, which was organised through a core settlement, resembling a town, where the houses where located, and an outer part surrounding that core, which was divided in two parts: one for individual use and other for collective use. The former was meant to be used for supporting the family, while the latter was meant to have one share for forest harvesting, one for pastures and others for the community's tillage (Samudio Aizpurúa 1995, 180). In this distribution, the collective part was what corresponded specifically to the *resguardo* (García Jimeno 2008, 29). The *cabildo* was in charge of administrative tasks like the management of common goods, such as the lands of the *resguardo*, the livestock and the funds obtained from the commercialization of the collective production, known as *cajas de comunidad (*Gutiérrez Ramos 2012, 62).

[9] The reasons for creating *resguardos* have been widely discussed. Some consider them as the last attempt to tackle the failure of the policies to keep the divide between both republics (Solano de las Aguas and Flórez Bolívar 2009); others consider they had the goal of protecting indigenous populations from being exploited by the *encomenderos* (Bohórquez 2002; Solano de las Aguas and Flórez Bolívar 2009), as well as from the negative influence of black, mestizo and 'uncivilized' indigenous populations (Bohórquez 2002; Machado Cartagena and Vivas García 2009). Other explanations are related to the achievement of fiscal goals of the Crown through tax collection (García Jimeno 2008); the facilitation of the social control and indoctrination of Indigenous peoples (García Jimeno 2008); as well as the guaranteeing of labour force availability and the production of consumer goods (Bohórquez 2002). It has also been proposed that the creation of *resguardos* had the goal of weakening the local civil and clerical authorities that were challenging the Crown's orders, through the establishment of barriers between the indigenous population and the new inhabitants of the continent (García Jimeno 2008). Finally, some scholars posit that *resguardos* were created to guarantee Indigenous peoples' access to land (Samudio Aizpurúa 1995; Gutiérrez Ramos 2012).

(García Jimeno 2008, 31)[10], which led to the emergence of several mechanisms of resistance, such as escaping, rebellion, relocation in other towns or even '*turning into mestizos'* (Solano de las Aguas and Flórez Bolívar 2007, 277). However, *resguardos* were later vindicated as a necessary step to obtain lands (Quiroga Zuluaga 2015) and were defended by Indigenous peoples against the illustrated policies that promoted their dissolution (García Jimeno 2008; Murgueitio Manrique 2015).

By the time the Colombian republic was created, land concentration processes had already taken place for the benefit of a '*reduced oligarchy'* (Tirado Mejía 1970, 107) and Indigenous peoples' territories had been progressively reduced, through the incorporation of indigenous owned lands into the land market[11], in addition to land grabbing processes. The onslaught against *resguardos* started to diminish in the decade of 1960 with the enactment of law 135 in 1961, which led to the first institutional organisation of the agrarian reform in Colombia (Franco-Cañas and De los Ríos-Carmenado 2011) and fostered land titling for Indigenous peoples. Thus, the territorial configuration of the republic of Colombia has been permanently shaped by land grabbing processes that have rendered most Indigenous peoples landless in the Caribbean and the Andean region; while some indigenous populations were forced to displace to remote areas, where non-indigenous population was scarce or non-existent, in order to keep their customary practices.

2.2 Current state of indigenous territories in Colombia

In addition to the colonial imprint of the current territorial configuration of Colombia, the study of indigenous territories requires of acknowledging that the multiple decades of armed conflict in this country have affected all spheres of social life[12]. Moreover, the impact of armed conflict over Indigenous peoples has been especially severe. In 2018, 207787 indigenous persons were registered as victims[13], which corresponds approximately to 10,9 % of all

[10] Indigenous peoples were forced to live with other indigenous groups, who had different languages and customs, as well as they were obliged to abandon their homes and their traditional way of living, as they were moved into the area of the *resguardo* (Bohórquez 2002).
[11] It is necessary to keep in mind that most indigenous persons were not consider citizens and had, therefore, less resources to defend their rights in the face of inequitable or even violent business conditions.
[12] The date of the commencement of armed conflict in Colombia is debated. Some argue that it started in 1964, when the guerrilla groups known as FARC-EP and ELN defied the State (CHCV 2015, 19); others consider that the armed conflict has been an almost non-stop phenomenon that can be traced back to the numerous civil wars and violence occurring since the 19th century (CHCV 2015, 8).
[13] According to the reports of the Victims registry agency by the 1st of July of 2018. Available at: https://www.unidadvictimas.gov.co/es/registro-unico-de-victimas-ruv/37394

indigenous population[14]. The most important cause for their consideration as victims is forced displacement[15] (Minsalud 2016, 35), which is inextricably bound to land grabbing and territorial control (CCC 2009; Gómez Isa 2014). According to the constitutional court of Colombia (CCC), there is a set of common factors that affect Indigenous peoples (CCC 2009):

1) Confrontations between armed actors developed in indigenous territories, without active involvement of indigenous communities and its members;

2) The war processes that actively involve the peoples and indigenous communities, as well as their individual members in the armed conflict;

3) The territorial and social economic processes connected to internal armed conflict, which affect their traditional territories and cultures[16].

According to the national agency in charge of land restitution, 75 % of all requirements made by ethnic groups[17] for land restitution in 2017 had been made by Indigenous peoples (URT 2017)[18]. Moreover, the CCC identifies a relationship between economic activities and territorial dispossession of Indigenous peoples (CCC 2009), due to the economic value that indigenous lands and natural resources have for non-indigenous actors. This affects *resguardos* as well as areas requested for their enlargement, areas that could potentially be claimed by Indigenous peoples and ancestral or traditional territories in general[19]. Since 2009, 36 Indigenous peoples have been identified as requiring special protection measures; however, the situation has not improved significantly, not even after the peace accords of 2016. In 2019, there were 107 human rights activist assassinated in Colombia, in addition to 13 other cases under investigation and 10 more confirmed within the first 14 days of 2020, among which '*the single*

[14] According to the census of 2018, indigenous population of Colombia was of 1.905.617 persons, part of 115 Indigenous peoples, which corresponds to 4,4 % of the national population. 50,1 % of indigenous population correspond to women. See: DANE. 2018. *Grupos étnicos*. https://www.dane.gov.co/index.php/estadisticas-por-tema/demografia-y-poblacion/grupos-etnicos/informacion-tecnica

[15] In 2017, Colombia was considered as the country with the highest number of internally displaced people, over Syria and the Democratic republic of Congo. See: Global report 2017 of the UN High Commissioner for Refugees. http://reporting.unhcr.org/sites/default/files/gr2017/pdf/GR2017_English_Full_lowres.pdf

[16] The court further identifies elements exacerbated by war, such as poverty, food insecurity, frail health conditions, lack of statistical visibility via census, as well as ethnic and social weakening and acculturation, even if they are not directly linked to the armed conflict (CCC 2009).

[17] Indigenous peoples, black communities, afrodescendants, *raizales* or *palenqueros*.

[18] Furthermore, between 2014 and 2017, nine judgements have mandated the restitution of territorial rights to ethnic population, seven of which correspond to indigenous territories (URT 2018)

[19] The court asserts that 'there is an interweaving of the processes of enlargement and clarification of resguardos and of factors related to the internal armed conflict such as the presence of armed actors, illegal crops and military activities in enlargement areas' (CCC 2009).

most targeted group was human rights defenders advocating on behalf of community-based and specific ethnic groups such as Indigenous peoples and Afro-Colombians' (HCHR 2020)[20].

2.2.1 Indigenous territorial rights in Colombia

The national constitution of Colombia of 1991 fostered a series of changes for Colombian society, considering that before that year there was no '*real justiciability of social rights'* (Uprimny Yepes ND, 2)[21]. Despite few numbers in the constitutional assembly from which the constitution emerged, indigenous representatives managed to build alliances with other progressive sectors to incorporate the protection of indigenous rights in the text of the constitution (Castillo Gómez 2007; Santamaría Chavarro 2013).

Indigenous peoples' rights are recognised especially through article 7, in which the Colombian State recognises and protects the ethnic and cultural diversity of the nation; thus, making explicit that assimilationist politics could not continue (Semper 2006)[22]. The constitution recognises, among other rights[23], the special indigenous Jurisdiction through which customary justice systems and indigenous authorities are recognised as legitimate for indigenous territories. The constitution further establishes special regulations for indigenous territories, which are addressed under three categories: indigenous territories[24], territorial entities and

---

[20] Human rights press report of the Spokesperson for the UN High Commissioner for Human Rights: Marta Hurtado. January 14 of 2020. https://www.hchr.org.co/index.php/informacion-publica/notas-informativas/9129-nota-informativa-defensoras-y-defensores-asesinados-durante-2019

[21] This constitution was built after a period of extreme violence and political chaos, as a consensual attempt to broaden democracy (Uprimny Yepes ND; Fox et. al 1992; Santamaría Chavarro 2013). Its drafting had unprecedented participation of different sectors of Colombian society (Fox et al. 1992; Rampf and Chavarro 2014), including Indigenous peoples who participated through three representatives: Lorenzo Muelas and Francisco Rojas Birry, who became the first indigenous persons participating in national elections (Santamaría Chavarro 2013) and Alfonso Peña Chepe, who took part of the assembly as a result of the accords between the national government and the recently demobilized indigenous armed group *Movimiento Armado Quintín Lame* (ONIC 1991).

[22] Prior to convention 169, the definition of indigenous in Colombia was subject of discussion between two opposite views, the criteria defined by the State, which aimed at using objective reasons; in contrast to the arguments of ethnic groups, which were considered 'subjective' (Correa Rubio 2008). After the ratification in 1991, the convention functions as the basis for further normative development of the constitutional court, as well as of other instances (CCC 2016b). Nevertheless, identification of Indigenous peoples is made by the Colombian State as the authority to ultimately determine who can be identified as indigenous (Correa Rubio 2008). Identification is a prerequisite to access benefits from public policies and to secure land and resources.

[23] Recognition of indigenous language as official in their territories (art. 10); right to education according to their cultural identity (art. 68); Equality and dignity of all cultures coexisting in the country (art. 70), Special constituency for Indigenous peoples in the congress (art. 171; 176). Furthermore, the Colombian constitutional court (CCC) has uttered several judgements based on article 7 according to an understanding of indigenous communities as subject of collective rights (Semper 2006,765).

[24] Defined in decree 2164 (1995) as '*areas under regular and permanent possession of a community, a parcialidad or an indigenous group and those areas that constitute the traditional realm of their social, economic and cultural activities, even if not under possession'* (art. 2).

resguardos. The first category has a broader extent than the other two and refers to areas that have traditionally been possessed by Indigenous peoples, permanently or during certain time. This denomination has no legally defined boundaries, except for the recent delimitation of the ancestral territory of the peoples of the *Sierra nevada de santa marta*[25]. The second category is related to the political administrative arrangement of the country, stablishing indigenous territorial entities (ETIs) as one of the four types of territorial entities in which the country is organised[26]. The third one, *resguardos,* is the category that has had more legal developments.

A *resguardo is* currently defined as a legal and social-political institution of special character, which is compounded by one or more indigenous communities. These communities possess a collective property title for which the warranties conferred to private property are also applied. Inside *resguardos*, communities are ruled by an autonomous organisation which manages territory and internal affairs, which is ruled by indigenous jurisdiction[27] and their own regulatory system[28]. The collective title over *resguardos'* lands can only be granted to Indigenous peoples. Moreover, the constitutional frame establishes that *resguardos* cannot be transferred, seized or dissolved; therefore, they are outside of the land market[29].

Nevertheless, *resguardos* are inserted in a larger matrix characterised by the '*territorial problem'* of Colombia (Villa Rincón and Houghton 2004), in which Indigenous peoples '*have been dispossessed, de-territorialized and later displaced*' (p. 27). Moreover, there has been an attempt to reverse the progress obtained concerning indigenous territorial rights (Houghton, 2008), which has fostered social mobilization to exert pressure over the national government[30]. Therefore, indigenous rights are usually protected only through the involvement of the constitutional court, which frequently invokes convention 169 in its rulings[31]. Within a frame of push and pull relations between Indigenous peoples and the national government of Colombia; the

[25] Decree 1500 (2018).
[26] Departments, districts, municipalities and indigenous territories are territorial entities (art. 286).
[27] An analysis about indigenous jurisdiction in Colombia can be found in Becerra Becerra, (2006); Londoño Berrío, (2009). Judgement T-921/13 issued by the constitutional court is the current legal referent for such matters.
[28] This paragraph contains a translation of the definition contained in decree 2164 (1995). See art. 2.
[29] Article 63 of the constitution states that public goods, national parks, ethnic groups' communal lands, r*esguardos* lands, archaeological patrimony and others determined by the law are inalienable, imprescriptible and protected against seizure.
[30] In 1996, Indigenous peoples took over the Colombian Episcopal Conference in Cali for a month. This led to the enactment of decree 1396 (1996), which created the national commission for indigenous people's human rights, and decree 1397 (1996), which created the national commission on indigenous territories and the permanent negotiation roundtable (MPC) with the national government (Brilman 2013; MPC 2015).
[31] See for example judgement T-704 (2016). Section 1.2 Regulatory framework for ethnic rights protection, which is also applied to some Afro descendent communities in Colombia.

social mobilization of 2013[32] led to the enactment the 'autonomy decrees' in 2014[33] (MPC 2015). After 20 years of neglection, decree 1953 (2014) enables indigenous territories to acquire some functions regarding provision of public services and direct administration of financial resources, as an intermediate step towards their transformation into ETIs. However, only 11 *resguardos* and associations have acquired the qualifications that enable them to carry out the administration of public resources as established in the decree, which requires a certification provided by the national planning department (DNP). Therefore, the majority of *resguardos* continue to access resources through the intermediation of municipalities.

2.2.2 The spatial relevance of indigenous territories

There are two types of indigenous territories in Colombia with land titles: reserves and *resguardos*. The first type corresponds to areas that were bounded by the now disappeared Agrarian reform institute (INCORA)[34], which were demarcated for the administration of *baldíos*.[35]. Indigenous reserves had a temporary character, since the final purpose was to constitute new *resguardos*; nevertheless, there still are indigenous reserves that have not been transformed into *resguardos*[36]. Currently, a distinction is made between colonial and republican *resguardos*. The former corresponds to those *resguardos* created during the colonial times, which are usually subject of clarification procedures[37]. The latter corresponds mainly to the *resguardos* created under agrarian regulations. According to the national lands agency (ANT), there are 715 *resguardos* which add up to 287019,06 km^2 (ANT 2019)[38]. Colombia has a continental area of 1141748 km^2, divided in 32 subnational units called departments. According to the national census of 2018, 79 % of all indigenous population is found in rural areas of all the departments. Therefore, *resguardos* correspond to roughly 25 % of Colombian territory.

[32] Known as 'Minga social, indígena y popular por la vida, el territorio, la autonomía y la soberanía'.
[33] Decrees 1953 and 2333. The latter contains regulations towards ancestral and traditional territories.
[34] Created by law 135 (1961). See article 84.
[35] The term *Baldío* is used to denominate public assets that are subject of allocation. The term is further discussed in chapter six.
[36] The case is of the Kofán people is emblematic, for whom the reserve Santa Rosa del Guamuéz was bounded with 3750 ha; however, only 756, 5499 ha have been constituted as a resguardo. See: Corte Constitucional de Colombia (CCC). 2013. *Sentencia T-387 de 2013*. Magistrada María Victoria Calle Correa: June 28. http://www.corteconstitucional.gov.co/relatoria/2013/T-387-13.htm
[37] Because of the difficulties in establishing their current boundaries through colonial time's descriptions and problems created by dissolution processes of colonial r*esguardos*. Herrera Arango (2017) indicates that colonial *resguardos* correspond to 410,835 ha, located mainly in the departments of Cauca, Nariño and Caldas.
[38] Until August of 2019. Duplicated registers in the database provided by ANT were removed.

While most *resguardos* have been constituted for a single people, some have been constituted for several. The smallest *resguardos* correspond to '*Estación Tálaga'* (6,5625 ha) and '*Laguna Pejendino'* (6,9183 ha), of the Nasa and the Quillacinga peoples respectively. In contrast, some *resguardos* reach millions of hectares, among which *'Predio Putumayo'* (5818702,5 ha) and '*Gran resguardo del Vaupés'* (3375125 ha) are the largest ones and were bounded for several peoples[39]. Nevertheless, not all *resguardos* with several peoples have large areas. This is exemplified by the *resguardo La playa* for the *Tikunas* and *Cocamas*, also located in the Amazon region, with 50,42 ha. Regardless of their differences, *resguardos* share a common characteristic: most of their land-use contributes to forest conservation in areas of ecological importance (Herrera Arango 2017). Because of the condition of *resguardos* as social-political institutions in spatially bounded units, *'their autonomous status is a significant territorial anomaly'* (Van Cott 2000, 47) in the complex territorial configuration of Colombia, while Indigenous peoples demand that obstacles for their autonomy are removed, according to the rights enshrined in the national constitution.

[39] Huitotos, Boras, Ocainas, Inga-Kichwa and Murui-Muinane populations are found in Predio Putumayo. Wananos, Desanos, Tukanos, cubeos, Sirianos, Barasanas, Yurutíes, Carapanas, Piratapuyos, Pisamira, Makuna, Tatuyos, Curripacos, Tuzuca, Tanimuca, Bará Jupda, Tariano, Kakuas live in the '*Gran resguardo del Vaupés'*.

3 LITERATURE REVIEW

The subjects of environmental sustainability and indigenous territorial autonomy are addressed differently according to the context in which the research takes place. several studies have focused in the exercise of indigenous autonomy in Latin America (Garcés Velásquez 2011; Larson and Lewis-Mendoza 2012; Finley-Brook 2013; Tockman and Cameron 2014; Gonzales and González 2015; Binder and Binder 2016). However, most of these works are concerned with the extent to which legal frameworks have been implemented for indigenous autonomy, focusing thus in discussing about indigenous rights; rather than discussing territorial aspects concerning natural resources and ecosystems. When natural resources are discussed in these works, the tendency is to emphasise decision-making actors and processes, rather than the consequences of such decisions.

Other researchers have studied the nexus between nature protection and the titling of indigenous territories (Davis and Wali 1993; Offen 2003; Hale 2011; Finley-Brook 2013; Anthias and Radcliffe 2015); indigenous management of common pool resources (Morrow and Watts 1996; Islam and Berkes 2016); Indigenous peoples' participation in spatial environmental planning (Berke et al. 2000; Hibbard et al. 2008; Booth and Muir 2011; Comandulli, 2016); and Indigenous peoples contribution to biodiversity conservation (Berkes et al. 2000; Pretty et al. 2009; Borrini-Feyerabend, et al. 2010; Lyver and Tylianakis 2017). However, scholars tend to focus in problems that are related to environmental sustainability, usually without discussing the extent of this concept nor its relevance concerning Indigenous peoples.

Only a handful of scholars explore the nexus between territorial autonomy and environmental sustainability, which may be clustered in two groups. On the one hand, scholars interested on indigenous planning of territories who approach planning practice as intrinsically involving environmental aspects, due to the close relationship between Indigenous peoples and nature (Zaferatos 1998; Vieco Albarracín et al. 2000; Matunga, 2013; Prusak et al. 2016). Nevertheless, most of these studies are based on the assumption future sustainability relies on the continuation of the way in which Indigenous peoples have interacted with nature for centuries until present day.

On the other hand, some scholars are using theoretical inputs from political ecology (studies about land titling and tenure regimes); indigenous rights and environmental justice (studies

about prior and informed consultation, territorial rights); as well as commons literature (studies about property regimes, rule-making, resource access) in order to discuss indigenous territories (Finley-Brook and Offen 2009; Larson 2010; Larson and Lewis-Mendoza 2012; Larson et al. 2015). These works coincide in their consistent focus on the concepts of authority, collective lands demarcation and indigenous rights for analysing indigenous autonomy regimes. For the Colombian case, works about *resguardos* (Van de Sandt 2007; Ulloa Cubillos 2010; Zapata Torres 2010; Premauer 2013; Valderrama González 2016) and environmental conflicts in indigenous territories (Rodríguez 2016), constitute salient approaches in which the spatial dimension of indigenous territorial autonomy is addressed. However, some of these works tend to reproduce what Brown and Purcell (2005) denominate the 'local trap', which '*leads researchers to assume that the key to environmental sustainability, social justice, and democracy (…) is devolution of power to local-scale actors and organizations'* (p. 608). Moreover, they concentrate on the transgression of indigenous rights and the factors that hinder autonomy, rather than studying the characteristics of indigenous institutions concerning nature.

.

3.1 Indigenous territories

According to Haesbaert (2004), there is a polysemy regarding the concept of territory, even within the field of geography, which depends on *'the philosophical standpoint adopted by the researcher'* (p. 41). Therefore, the understanding of the concepts is influenced by '*the social relations and the historical context in which it is inserted* (p. 78). Moreover, the author warns in relation to Indigenous peoples that one should be careful with the *"transplant' and generalization of concepts such as territory, which are moulded within our reality, to completely different contexts such as those of the generically denominated traditional societies'* (p. 73). It is beyond the scope of this review to discuss the notion of territory itself; however, it is essential for this research to gain clarity about what indigenous territories entail.

3.1.1 The rights approach

Indigenous peoples' rights emerged as a global issue only in the 20th century, as a result of the convergence of social-historical elements whose study; however, goes beyond the scope of

this dissertation[40]. These elements led to the emergence of the International labour organisation (ILO) convention 107 in 1957[41], which constitutes a landmark in the creation of an international frame for the protection of Indigenous peoples' rights. Moreover, some authors consider that *all contemporary discussion about the rights of Indigenous peoples in international law is based on the ILO's work on this issues'* (Rodgers et al. 2009, 85).

Lands and territories have been at the core of Indigenous peoples' agenda for decades. Moreover, indigenous movements have highlighted *'the fundamental nature of their relationship to their homelands'* (Daes 2001, 7); in contrast to non-indigenous[42] populations. The Martínez Cobo study states on this regard that:

'It is essential to know and understand the deeply spiritual special relationship between Indigenous peoples and their land as basic to their existence as such and to all their beliefs, customs, traditions and culture. For such peoples, the land is not merely a possession and a means of production. The entire relationship between the spiritual life of Indigenous peoples and Mother Earth, and their land, has a great many deep-seated implications. Their land is not a commodity which can be acquired, but a material element to be enjoyed freely' (UN 1983, paragraphs 196-197).

The question of lands and territories was addressed already in convention 107[43] since '*a major underlying cause of the vulnerability of these persons in the labour market was the widespread deprivation of the land from which they had previously made their living'* (Eide 2015, 105). Nevertheless, according to the report submitted in 2001 by the former special rapporteur of the sub-commission on the promotion and protection of human rights, *'indigenous societies in a number of countries are in a state of rapid deterioration and change due in large part to the denial of the rights of the Indigenous peoples to lands, territories and resources'*(Daes 2001, 9). More recently, the economic commission for Latin America and the caribbean (ECLAC) (2014) discusses how Indigenous peoples in Latin America continue to claim rights to recordation, demarcation, restitution, compensation and indemnification, as well as the right to exert those rights in a collective manner.

---

[40] A publication concerning Indigenous peoples rights in international law, edited by Roxanne Dunbar-Ortiz, emphasises the perspective of key actors of the international debate. It can be downloaded from: https://www.iwgia.org/images/publications/0709_INDIGENOUS_PEOPLES_RIGHTS_2.pdf

[41] An explanation of the emergence of this convention under the ILO can be found in appendix A of this dissertation.

[42] The denomination 'non-indigenous' is used here to indicate all elements that do not pertain Indigenous peoples. In contrast, the adjective 'western' is actively avoided, as it is considered here that it contributes in perpetuating misconceptions about how the planet can be arbitrarily divided.

[43] Articles 11 to 14, section 'Lands'.

In the Latin American context, two multilateral instruments have been used to underpin Indigenous peoples' claims: ILO convention 169[44] and the United nations declaration on the rights of Indigenous peoples (UNDRIP). The purpose of ILO convention 169 is the adoption of new standards '*with a view to removing the assimilationist orientation of the earlier standards*[45]*'* (ILO 1989) and constitutes ILO's *'most refined outcome'* (Rodríguez-Piñero 2005, 3). It has been ratified by 22 States, of which 15 are in Latin America where it has had the highest constitutional, legal and jurisprudential development (Aylwin 2014a, 9). ILO convention 169 has not been ratified further because of the rejection of '*the notion that any population group in the country precedes any other'* (p. 89) that is implied in the idea of 'first nations' and in the term 'indigenous'[46]. According to Eide (2015), ILO convention 169 *'is geared towards autonomy over land and resources and is therefore not acceptable to India or some other Asian states and is looked upon with scepticism by many African states'* (p. 113), which would explain the low number of ratifying parties.

The convention has been taken as a referent for Indigenous peoples' rights in countries that have not ratified it, as Xanthaki (2009) discusses for Australian case, where ILO convention 169 has been referred to as *"an indication of the direction in which the international law is proceeding"* (p. 29). Moreover, ILO convention 169 introduces the term 'people' instead of 'population' (Ortiz Tirado 2014; Muñoz Onofre 2014), which is crucial to claim the right to self-determination (Rogers et al., 2005). Nevertheless, the effectiveness of ILO convention 169 has been questioned because of a gap between the formal recognition of rights and their exercise, known as 'the implementation gap', which seems to persist in most countries with indigenous populations (Aylwin 2014a).

Concerning indigenous territories, ILO convention 169 provides crucial inputs concerning the recognition of the collective and immaterial characteristics of land or territory[47], which has contributed to the recognition of ancestral lands and has widened the scope of the concept of indigenous territories. This conceptualisation has been included in some of the rulings produced by the Inter-American commission on human rights (IACHR) by stating that territories include *'not only physically occupied spaces but also those used for their cultural or subsistence*

[44] ILO convention 169 was adopted on June 27th of 1989 and entered into force in September 5th of 1991.
[45] In relation to convention 107 (1957), which continues to be in force for some countries. See appendix A.
[46] An example of this is found in the discussions held in Africa, where it has been argued that all African peoples are indigenous to this continent (Burger 2014). The critics towards this convention have been addressed by the African Commission's Working Group of Experts on Indigenous Populations/Communities, stating that *'almost all African states host a rich variety of different ethnic groups (…) However, some are in a structurally subordinate position to the dominating groups and the State, leading to marginalisation and discrimination. It is this situation that the indigenous concept, in its modern analytical form and the international legal framework attached to it, addresses'* (ACHPR 2005, 101).
[47] See article 13 about the collective aspects of peoples' relationship with land and territories.

activities, such as routes of access' (IACHR, 2009, par. 40). In this line of reasoning, indigenous territories may include larger areas than those over which Indigenous peoples currently exert domain or property. Thus, ILO convention 169 and further juridical developments have opened a gateway for Indigenous peoples to claim access to and control over territories that are currently beyond their possession, which has contributed to stop or slow down land dispossession processes occurring since the colonial period (Aylwin 2014a).

With a much broader set of countries than ILO convention 169, the UNDRIP was adopted in 2007 by 144 State members after two decades of construction (Engle 2011, 143). Its adoption by the United nations (UN) general assembly indicates that it should be considered by all UN member States in good faith (ILO 2013). Currently, the four opposing countries have adopted the Declaration, while abstentions, have been reversed (Burger 2014, 218). Therefore, the global scope of this instrument is remarkable[48] and constitutes a central benchmark for Indigenous peoples' rights (Broch et al. 2017). However, unlike ILO conventions, the UNDRIP has no binding force (ILO 2013)[49].

The provisions contained in the UNDRIP and ILO convention 169 can be considered as complementary (ILO 2013). ILO convention 169 goes further than the UNDRIP regarding the demarcation of indigenous lands (Xanthaki 2009, 30); while the declaration addresses subjects excluded from convention 169 regarding the militarization of indigenous lands and the protection of traditional knowledge (ILO 2013). However, the binding character of ILO convention 169 has been crucial for Indigenous peoples to advance their territorial claims.

The emergence of ILO convention 169 has been conceptualised by some scholars as part of three '*cycles of juridical recognition'* (Aylwin 2014c, 276) of indigenous rights. The first cycle was characterised by the emergence of multiculturalism, the introduction of individual and collective rights to cultural identity, as well as other specific indigenous rights (Santos 2010; Aylwin 2014c)[50]. The second cycle was initiated by the ratification of ILO convention 169 in 1989, which led the ratifying parties incorporated a common frame for indigenous rights into their national constitutions. As a result, the constitutions emphasized the pluricultural, multicultural or multi-ethnic nature of states (Aylwin 2014c). Bengoa Cabello (2016) refers to these developments as 'the indigenous emergence' in Latin America, which had its most

[48] The declaration was passed with 144 votes in favour, 11 abstentions and 4 votes against from Australia, Canada, New Zealand and the United States. At the time, the Colombian State abstained from voting.
[49] Nevertheless, Bolivia incorporated the UNDRIP in its juridical frame through a law (Albó 2012).
[50] According to Santos (2010), this scenario fostered the adoption of multicultural constitutionalism in Canada in 1982, Guatemala in 1985, Nicaragua in 1987 and Brasil in 1988 (p. 12).

outstanding manifestation during the decade of 1990[51]. According to this author, indigenous movements in Latin America shifted agrarian vindications of the past towards the recognition of Indigenous peoples, and a *'demand for a multi-ethnic, multicultural society: several peoples in one same nation'* (p. 95).

ILO convention 169 has provided Indigenous peoples with a crucial tool that was not available before, the right to prior consultation (Rodríguez-Piñero 2005; ILO 2013). The article six of this convention states that governments shall consult peoples *'whenever consideration is being given to legislative or administrative measures which may affect them directly'*[52]. Thus, the right to prior consultation has been claimed by Indigenous peoples in Latin America in their national contexts and at international instances, such as the Inter-American court of human rights-and the Inter-American commission on human rights. Moreover, these instances '*have developed case law regarding the rights of Indigenous peoples'* (Broch et al. 2017, 43), based on the contents of convention 169 and the UNDRIP. However, several problems persist concerning the implementation of prior consultation (Aylwin 2014; DPLF 2015; MacInnes, Colchester and Whitmore 2017).

The existence of prior consultation in the countries that have ratified ILO convention 169 has boosted research about indigenous claims, prior consultation and environmental issues. These topics have been addressed by scholars using the lens of environmental justice, which tend to focus on environmental conflicts. According to Martinez-Alier et al. (2016), the concepts used within environmental justice that concern Indigenous peoples are also related to topics such as biopiracy, environmental racism and environmental movements of the poor; however, when indigenous territorial rights are discussed under the conceptual frame of environmental justice, they are usually described as related to '*conflicts on mining, oil exploitation, dams, etc.,* [in which] *communities ask to apply legislation defending indigenous rights'* (p. 742). In the Colombian context, Rodríguez (2011, 2016) has conducted research concerning indigenous rights, environmental conflicts and prior consultation processes. According to Rodríguez (2016), environmental conflicts have direct impacts over Indigenous peoples' *'cultures, social, organisative*

[51] The author argues that 'the indigenous emergence' has three stages: the decade of 1980; the so called 'celebration of the 500 years of the discovery of America' between 1985 and 1992; and finally, the emergence of the 1990s, with the uprisings of Ecuador as of 1990 and of Chiapas in 1994 (Bengoa Cabello 2016)

[52] The convention states that the consultation should occur: '*prior to exploration or exploitation of mineral and sub-surface resources* (art. 15)*; prior to relocation, which should take place only with the free and informed consent (art. 16); When considering alienation or transmission of Indigenous peoples' lands outside their own communities* (art. 17*); On the organisation and operation of special vocational training programmes (art. 22); On literacy and educational programmes and measures* (art. 27, 28)' (ILO 2013, 12).

processes and in the right to the effective use of their lands, territories and the natural resources in them' (p. 11). According to this author, the fundamental right to prior consultation is crucial to prevent environmental conflicts in indigenous territories and corresponds to the implementation of '*the minimal requirements established by ILO convention 169, the Inter-American court and the national constitutional court'* (2011, 71).

Finally, the third cycle of juridical recognition began in the first decade of the 21st century, triggered by the constitutional processes of Bolivia, between 2006 and 2009, and Ecuador in 2008 (Santos 2010). During this cycle, scholars broadened the debate calling for a shift from multicultural to plurinational states (Santos 2010) and from multiculturalism to interculturality (Walsh 2008); in order to question eurocentrism and the coloniality of power (Quijano 2007), as well as the new categories that become hegemonic in such debate (Rivera Cusicanqui 2012). These cycles have allowed Indigenous peoples to achieve higher degrees of autonomy (Tamburini 2012; Aylwin 2014a). As well, they have contributed to the emergence of a growing body of research concerning indigenous territories and autonomy.

3.1.2 Boundary-making and indigenous territories

When discussing indigenous territories, denominations such as historic, ancestral, traditional and customary territory are frequently invoked. These denominations refer to those *'territories that have historically been organized by a people and their culture'* (Tapia Mealla 2006, 89). The definition and the drawing of boundaries of these territories is complex and constitutes a highly contested issue in relation to property and the authority of the States (Lea 2008). Escobar (2015), refers to these territories as those characterised by an *'ancient occupation, sometimes very ancient, of a given territory; the continuity of an ancestral mandate which persists in the memory of elders (…) and the historical experience (…) of living in another life model, other worldview'* (p. 27)[53]. The profundity with which scholars address the notion of ancestral territory varies greatly, which allows for the identification of two tendencies among scholars. The first one corresponds to those scholars who stablish a contrast between indigenous and non-indigenous understandings of territories,

[53] Other scholars, mainly in Anthropology, focus in the study of indigenous landscapes and their relation to history and culture, among which Santos-Granero (2004) discusses the Yanesha people's landscape. This author studies '*the occupation of what would become their traditional territory in pre-Hispanic times and the process of territorial dispossession and physical displacement that they were submitted to during colonial and republican times'* (p. 190). This line of inquiry is more focused in past times; therefore, no further exploration was made. Other works in this line can be found in Garcia Hierro and Surralles (2004), where the article of Santos-Granero (2004) is included.

most of which correspond to non-indigenous persons[54]. In the second group, scholars discuss questions of land demarcation, titling and property regimes.

As part of the first group, De la Cadena (2010) discusses Indigenous peoples' understanding about territory through the notion of '*Ayllu*'. This term is taken from Kichwa language, which '*elicits the relations of humans and other-than-human beings that interact in a given territory marking it as a specific place*' (p. 353). The meaning of this term and its contrast to non-indigenous understandings of territory, this author quotes a Kichwa native speaker who explains that the *Ayllu 'is a dynamic space where the whole community of beings that exist in the world lives; this includes humans, plants, animals, the mountains, the rivers, the rain, etc.'* (p. 354). Similarly, Ulloa Cubillos (2017) discusses the concept of 'relational indigenous environmental justice', where the territory, which includes humans and non-humans, is considered as a being and a political actor. Under this framing, Indigenous peoples propose '*other notions of justice by including territory and nature as "victims" of processes of extractions and destruction of the environment*' (p. 178). According to this author, indigenous proposals '*arise from other ontologies, notions of nature, justice, and rights, and conceptions of territory*' (p. 178).

This other way to approach territory is discussed by Temper (2019) with regard to the first nation Wet'sewet'en in Canada, which conceptualises territory in terms of their responsibility to it. According to this author, this understanding of territory entails a '*profound difference in vision between indigenous territorial relations and state forms of property*' (p. 99). Based on a decolonial analysis of the opposition to oil and gas pipelines from Wet'sewet'en's, this author questions environmental justice's frame based on recognition, distribution and participation. Her proposal is based on three pillars that take participation to also include self-governing authority and calls for going beyond distribution through '*breaking down the dualism between humans and nature, and beyond recognition, what is needed is epistemic justice and self-affirmation*. (p. 104). Escobar (2016) discusses such difference between visions through the concept of 'relational ontologies', which refers to *'multiple knowledges, or epistemes, refer to multiple worlds, or ontologies'* (p. 13). Thus, the opposing views about ethnic territories would correspond to fundamentally different ontologies: one that promotes one world and a subsequent homogenisation and others that allow for the existence of multiple relational ontologies. According to this author *'what occupies territories is a particular ontology'* (p. 20) and therefore, when Indigenous peoples, peasants or afro descendant peoples defend their ontologies against the one world notion, it

[54] See the work of Rivera Cusicanqui (2012) for a critical view of this situation. Cited in this dissertation.

is a question of ontological struggles[55]. In this line of reasoning, the dynamics of resistance against domination under a broader frame of understanding of *'territorial and commons defence as an ontological political practice'* (Escobar 2016, 19).

As part of the second group of scholars, the focus is placed on property regimes and the processes of land demarcation and collective titling. Some authors discuss critically the concept of property and argue that it is an alien notion for Indigenous peoples who; nevertheless, had to incorporate it into their demands in an attempt *'to protect their territorial rights'* (García Hierro 2004, 279). Furthermore, it is argued that *'in the case of indigenous societies, the territory is linked to a people, not to an individual, and no one thinks that he or she can dispose freely of it'* [56](p. 280), in contrast to non-indigenous systems that consider land property as an individual civil right. Similarly, Benson (2012) discusses mining in relation to Indigenous peoples' ontologies in the United States and argues that property *'is therefore based on a compilation of beliefs about relationship to space (…) property is not so much a legal concept as a social-cultural and philosophical one'* (p. 1450).

From a juridical perspective, Thom (2014), discusses the Canadian first nations of the *Hul'qumi'num* Treaty Group. In this case, the title and governance over indigenous territories was a subject of dispute with the State. This author argues against the understanding of indigenous property as exclusively occupied areas, since it imposes limitations over indigenous governance. Moreover, the author argues that state mechanisms based on boundary-making, private property and the notion of statehood contribute *'to maximize the certainty and effectiveness of state jurisdictions and systems of property, enabling the development of land, resources, and community'* (p. 17). The question of property is also discussed in terms of the contrast between customary and non-customary rights (Lea, 2008), aboriginal titles in former British ruled countries (Knafla 2010) and in relation to economic analysis of individual property rights (Aragon and Kessler 2018). However, other works in these research lines were not pursued since their trajectories pointed towards mainly juridical matters.

Other works approach indigenous territories through political ecology in terms of the '*confrontation of power strategies for the appropriation of nature'* (Porto-Gonçalves and Leff 2015, 72); nevertheless, ecosystems tend to be overlooked in this approach due to the tendency to assume that, once power struggles are solved mainly in favour of those who have been oppressed,

[55] The discussion about ontological differences has been addressed also in other disciplines. See Porter (2010) about planning practice and Indigenous peoples in Australia, cited in this dissertation.
[56] The author exemplifies this argument by comparing the situation of indigenous territories to that of countries: '*the Bolivian territory belongs to the Bolivian people, but it does not seem right to affirm that it is civil property of Bolivia or any of its citizens'* (p. 280)

alternative solutions will emerge[57]. Among these scholars, it is frequent to find references to the work of Karl Offen (2003) about land titling processes for ethnic groups in Latin America. This author analyses the Pacific region in Colombia and naming these processes the 'Territorial turn'[58] in collective land titling, in which ethnic territories would be produced through the relation between novel communal territoriality[59] and '*the institutions of global capitalism'* [60] (p. 66). This author highlights the key role of the World Bank in linking ancestral lands to projects of ethno-development[61], which some scholars consider that responds to the scholarly debate over '*the relative failure of the externally introduced development initiatives*' (Agrawal 1995, 416) and the premise that '*indigenous forms of land use and natural resource management maintain forest habitats'* (Davis and Wali 1993, 2)[62].

Thus, collective titles were deemed as a way to achieve the goals of stabilisation of property regimes in the countries under intervention and the removal of '*biodiverse lands from the vagaries of market forces (by insuring that collective properties cannot be transferred)* (Offen 2003, 51). This double functionality of collective ethnic fostered further discussions about the role of multilateral institutions in advancing the neoliberal agenda through the demarcation of indigenous territories. Hale (2011), for example, discusses how multilateral institutions fund programs in support of land and resource rights for Indigenous peoples in Central America, which promote, at the same time, ways to extend '*the grid of market intelligibility in property rights regimes throughout the region'* (p. 195). According to this author, these actions clear the path for investments such as large-scale mining or tourism, which are developed in properties that can be acquired at a low price and that will not be disputed by Indigenous peoples, whose territorial aspirations have been addressed through collective titles. Critics towards collective land titling

---

[57] A discussion about this trend in political ecology is made by Walker (2005). Nevertheless, it does not address indigenous territories. See Walker, Peter. 2005. Political ecology: where is the ecology? *Progress in Human Geography* 29, 1: 73-82. doi: 10.1191/0309132505ph530pr

[58] Hale (2011) defines it as: '*the inclination of both Latin American states and multilateral development institutions to recognise black and indigenous demands for territory'* (p. 186)

[59] In relation to Afro-descendant territories in Colombia regulated by the law 70 (1993).

[60] Li (2010) explains the nature of this relation when she argues that the World Bank promotes *'the commodification of land through titling (…) and now looks around for Indigenous people securely ensconced in collectively held territories who can benefit from market opportunity but not bear the risk of market competition because they cannot be dispossessed*' (p. 388).

[61] This can be broadly understood as an alternative approach to development '*that would allow Indigenous peoples to develop in culturally appropriate ways, according to their own priorities'* (Anthias and Radcliffe 2015, 259). According to Agrawal (1995), during the decades of 1950 and 1960, '*theorists of development saw Indigenous peoples and traditional knowledge as inefficient, inferior and an obstacle to development'* (p. 413); which required active intervention. Such understanding led to the emergence of approaches of '*developmental indigenism'* (Rozo and Del Cairo 2017), which promoted the 'social integration' of Indigenous peoples, that is, the '*transformation of those cultural features considered as dysfunctional to materialize the developmental project'* (p. 169).

[62] The Brundtland report presents an example of these assumptions by indicating that indigenous or tribal peoples: '*are the repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems.*' (WCED 1989, Chapter 4, par. 74).

for Indigenous peoples have also been raised by Li (2010)[63], who discusses that while indigeneity in the Asian context has contributed to resist dispossession; '*it has had less traction among small-scale farmers, who are eligible for the special protections associated with indigeneity only if they are able and willing to conform to a model of landholding that is collective and inalienable'* (p. 399).

In a closely related argument, some authors use the concept of accumulation by dispossession[64], to explain land grabbing and extraction of natural resources in indigenous territories (Perrault, 2013). Finley-Brook (2016), for example, discusses the case of the Miskitu people in Nicaragua, arguing that dispossession can take place even after demarcation of indigenous territories (p. 341). As well, she argues that titling can be designed to coincide with the priorities of external donors. Thus, this author identifies a 'territorial fix' (p. 338) through the granting of titles[65], which are not enough to solve tenure conflict. She further states that this is part of the territorial turn in Nicaragua, in which there is not only collective lands recognition '*but also delineation of market-friendly, socio-spatial institutions primed to extend economic integration'* (p. 351).

In contrast, Anthias and Radcliffe (2015) argue that '*global support for indigenous land rights can be seen as an example of (…) the "ethno-environmental fix[66]"'* (p. 257). These authors agree to some extent with discussions about the 'Territorial turn', regarding the link between indigenous land demarcation and *'Indigenous peoples' perceived role in biodiversity conservation'* (p. 260). However, through their analysis of indigenous originary peasant territories in Bolivia, they argue that there are more than market considerations. Thus, through the term "ethno-environmental fix" they identify '*ways in which ethno-development and environmental agendas were closely associated as mutually beneficial and logically coherent'* (p. 261). Moreover, they conclude that '*the messiness of postcolonial territories, deterritorialized processes of capital accumulation and the reality of indigenous livelihoods'* (p. 268)

63 A large group of literature has been produced regarding land demarcation, titling, Indigenous peoples and natural resources in Southeast Asia. A great share of it has been published in The Journal of Peasant studies. Nevertheless, the large amount of works available for Asia makes it very difficult to perform a proper review of that context in addition to the American one. Therefore, references to works in Asia are very scarce in this dissertation.

64 According to Perrault (2013), the concept was proposed by David Harvey as '*the forms of dispossession that mark primitive accumulation are not merely the "original sin of capitalism" as Marx infers, but rather an ongoing process, necessary to accumulation and undertaken as a strategy in response to recurrent crises of over accumulation. Accumulation by dispossession is, for Harvey, the predominant 'mode of accumulation under neoliberal capitalism'* (Perrault 2013, 1051). Massieu Trigo (2017, 132) argues that the work of Harvey draws first on the on the contributions of Rosa Luxemburg. See also Perrault (2013), page 1052. Cited in this dissertation.

65 The author does not elaborate on the scope of this term. Nevertheless, she does discuss it in relation to the concept of 'Communal fix' proposed by Li (2010) and the concept of 'ethno-environmental fix' proposed by Anthias and Radcliffe.

66 The authors build on the concept of `ecological fix', which is defined as 'strategies of externalization and internalization of socioenvironmental conditions, in search of profit, both by states and by capitalists' (Bakker 2009, 1782)

have resulted in not-quite-neoliberal'[67] spaces, where indigenous territories do not correspond to the expectations of the actors involved.

Some of the works discussed in this second group are included in what Coombes et al. (2012) denominate 'indigenous geographies'[68], which corresponds to literature produced by geography scholars who focus on land claims, environmental governance and the property of indigenous resources. Most of these works are informed by political ecology and are strongly related to anthropology. Coombes et al. (2012) discuss what they call 'indigenous propertization' and reflect critically on Indigenous peoples' property over natural resources, highlighting '*the intersection of customary tenure and neoliberalism'* (p. 816). Nevertheless, the authors provide little theoretical clarity in relation to indigenous territories, since their discussion focuses on property regimes and the use of natural resources. As well, some research concerned with the practice of (participatory) mapping (Chapin et al. 2005; Sletto et al. 2013), also referred to as participatory geographical information systems (GIS) (Álvarez Larraín and McCall 2019), is considered as part of indigenous geographies. This line of research studies mapping as a tool for Indigenous peoples *'to defend and claim their ancestral lands'* (Chapin et al. 2005, 630) through the cartographic recognition of '*community land uses in the struggles for land and resource rights related to traditional ways of living'* (Álvarez Larraín and McCall 2019, 652). The discussions here address the effectiveness of participatory mapping to guarantee access, control and/or property over lands or territories. However, some critical stances argue that this practice accommodates indigenous worldviews in order to fit non-indigenous paradigms that oversimplify indigenous cultures. The focus on the process of map making and indigenous rights acted as a deterrent to further review literature in this direction.

Despite the contributions made in both groups of literature, some authors discuss how scholars tend to take the question of territory as atemporal and immutable units. Bryan (2012), for example, argues that the claims of Indigenous peoples and afro-descendants challenge the understanding of territory as a static entity within the dominant spatial order. Moreover, this author considers that such claims '*point out how that order has been historically constituted through*

[67] Some scholars discuss 'not-quite-neoliberal (N-Q-N)' situations regarding Indigenous peoples; nevertheless, this research line is not further explored in this review. The work of Zimmerer is illustrative of this group. See Zimmerer (2015). Environmental governance through "Speaking like an indigenous State" and respatializing resources. *Geoforum, 64*. https://doi.org/10.1016/j.geoforum.2013.07.004.

[68] In Latin America, the denomination '*Geografías indígenas*' (indigenous geographies), has been used as a result from a symposium held in 2014 about '*indigenous geographies in Chile and Latin America*'. The resulting publications are concerned with territoriality framed in cultural geography, mostly in the Chilean and Argentinian contexts. Nevertheless, no reference to the work of Coombes et al. (2012) is made. See: Martínez Berríos, Nelson; Sepúlveda, Bastien; Palomino-Schalscha, Marcela. 2015. La cuestión territorial indígena en América Latina: algunas perspectivas desde Chile y Argentina. *Revista de Geografía Norte Grande*, 62: 5-9.

practices of exclusion frequently justified in racial terms' (p. 215), Similarly, Kent (2008) notices that many studies address topics related to indigenous territories with a shared *'assumption (…) that there indeed exist firmly established, customary territories that indigenous people have recently started to reclaim'* (p. 284). According to this author, a more reflexive approach should recognise that territory is '*historically dated invention'* (p. 290), in which indigenous territories should be conceptualised as '*the temporary outcome of a continuous process'* (p. 290). Kent (2008) used the example of the Bay of Puno in Peru to illustrate his argument, where the state response to a conflict over the access and control of reed beds, contributed to the claiming of the existence of territorial boundaries by the Uros people. The author explains how this indigenous people was *'compelled to argue for the existence of authentic and exclusive territories in order for their claims to be taken seriously'* (p. 304), even if there were none before. Therefore, Kent (2008) highlights the pitfalls of addressing indigenous territories with regard to the difficulties in grasping indigenous understandings of territory and the misconception of customary territory as a static construction that cannot be transformed in time. Hence, the notion of territorialisation is considered as paramount for the understanding of indigenous territories in this dissertation.

3.2 Environmental sustainability and indigenous territorial autonomy

The understanding of autonomy varies according to the context and sense in which it is used (Heintze 2002, 7) and often connotes a state of being rather than a well-defined legal category (Hannum 1992; Ghai 2013). According to Harhoff (1986), the concept of autonomy originated in the field of sociology and was later incorporated in the field of legal science to address decolonization issues. From that point on, the concept of autonomy has been used with multiple meanings; therefore, the use of the concept of territorial autonomy in relation to Indigenous peoples and their territories requires some prior clarification in order to guide the scope of this research.

According to Suksi (2011), territorial autonomy as a field of research has been active since the late 1980s, when several legally oriented studies were made concerning discussions about

minority protection[69], usually in relation to conflict management[70] (Cornell 2002; Siroky and Cuffe 2015). As international law discussions focus on territorial autonomy mainly in relation to State-nations, some key elements to consider are the geographical concentration of a group (Ghai 2000) and the relation between the unit under autonomy status and the encompassing State. As well, scholars highlight that distinctive groups require additional specific rights '*that can only be exercised collectively*' (Smith 2014, 15). Collective rights usually include affirmative action measures or special protection of certain practices, which may establish early foundations for minorities to govern themselves (Stroschein 2015, 22).

Nevertheless, territorial autonomy is not a concept over which there is full agreement. Ghai (2000), for example, considers that autonomy is a generic term used to refer to particular arrangements such as federalism. In contrast, Benedikter (2009) considers both terms as different. Moreover, it has been recognised that contexts differ greatly, therefore some need to be described in terms of centre-periphery dynamics, others in terms of majority-minority balance or in terms of powerful-powerless settings (Hannum 1992). International law scholars have concerned themselves extensively with autonomy, focusing frequently on accommodation of ethnic and cultural diversity (Ghai 2000; Benedikter, 2009; Malloy et al. 2015), where multiple understandings of autonomy can be found. For example, Harhoff (1986) refers to autonomy and local autonomy as equivalent terms, stating that it is a frame for '*characterizing the status of many regions throughout the world ranging somewhere between full-fledged, state-like sovereignty and full subordination under national authority*' (p. 32). Later, Heintze (2002) proposes a broad definition of autonomy as a *'partial independence from the influence of the national or central government'* (p. 7) that has been granted to a sub-national unit or to a group of persons. Other authors distinguish between personal, cultural, administrative and territorial autonomy (Tkacik 2008), others refer to 'Functional autonomy' (Suksi 2008) or 'territorial political autonomy' (Lapidoth 1997).

Researchers from other fields tend to use the concept of autonomy according to their own disciplinary context and with little references to other fields. The notion of local Autonomy, for example, has been used by political scientists in the European context as '*the right and the*

[69] Scholars here usually discuss the development of Article 27 of the 1966 International covenant on civil and political rights can be regarded as the first development regarding minority rights (Lapidoth 1997; Hannum 1993). Other instruments are discussed such as the 'Lund recommendations', important in the European context. See the work of Stroschein (2015) for the latter, cited in this dissertation.

[70] Some scholars investigate territorial autonomy in relation to armed conflict, secession and independence claims. These approaches usually understand the nation-state as a unit, based on an implicit presumption of cultural homogeneity (Smith 2014, 1) and a focus on a security paradigm to address the diffusion of power to collectivities (Malloy 2015, 3).

ability of local governments, under a defined juridical frame, to take the decisions about the services that they provide and the necessary financial resources, without interference from the centre' (Keuffer 2016, 470). In contrast, Pratchett (2004) discusses that local autonomy is essentially about the freedom of the individual, whereas democracy is about collective decision-making (p. 368). Understood this way, the concept local autonomy would be inadequate to discuss communities and local governments[71].

The concept of local autonomy is also found in the literature of common pool resources, where it is discussed as the possibility of individuals *'to craft their own institutions'* (Ostrom 1990, 200). Ghate (2000), for example, discusses forest management in central India, where the indigenous people of Lekha Mendha crafted their own institutions without formal autonomy recognition and '*without the support of external governmental authorities'* (p. 13). She concludes that '*the absence of autonomy to form and implement their own rules makes local resource management a costly endeavour for the communities'*; nevertheless, this author does define autonomy and appears to use it as equivalent to self-rule. Researchers in this field refer to autonomy and local autonomy as equivalent terms. Ostrom (1990), for example, argues that *'in a regime that allows substantial local autonomy to engage in constitutional and collective choices, appropriators may be authorized to select their own rules so long as they follow certain procedures'* (p. 200). Discussing forest commons, Chhatre and Agrawal (2009) affirm that local autonomy has a positive effect *'on the predicted probability of sustainable commons'* (p. 17668). These authors define a variable to measure autonomy which '*captures the idea that communities with sufficient autonomy will create rules on the basis of local knowledge of the resources that are appropriate for conservation vs. sustainable forest use'* (Chhatre and Agrawal 2009b, 1)[72]. However, as the text suggests, the notion of local autonomy is used without providing a conceptual clarification about its meaning and extent. Therefore, the use of the term local autonomy is purposefully avoided in this dissertation.

Due to the multiplicity of terms associated to the concept of territorial autonomy and the problems that seem to emerge from a poor conceptual clarification, the following section

---

[71] Further variations can also be found in urban politics studies. For example, Martínez López (2012) refers to 'social autonomy' and argues that the adjective 'social' is used to stress the dialectic dependence of individuals upon society and vice versa, where social autonomy in the squatters' movement constitutes an example of '*genuine autonomous urban movement'* (p. 881), in which autonomy '*is obtained through the squatters' responses to a socio-spatial framework of opportunities and constraints, by means of their organisational strength, cooperation and internal cohesion*' (p. 882). See: Martínez López, Miguel. 2012. The Squatters' Movement in Europe: A Durable Struggle for Social Autonomy in Urban Politics. *Antipode 45*: 866-887. https://doi.org/doi:10.1111/j.1467-8330.2012.01060.x

[72] Some critics have been raised concerning the argument that '*that institutions mediate the translation of local knowledge into sustainable resource management'* (p. 1, because the relation between local users management, conservation rules and the state of the forest *'should be examined rather than stated because it assumes that communities not only possess requisite knowledge but also have the ability to create and enforce sustainable use rules'* (Ternström et al 2010).

contains a review of the key notions that contribute to the discussion of territorial autonomy and the differences between them.

3.2.1 Subnational arrangements, self-government and autonomy

Under the frame of State-Nations, territorial units with autonomous features can be considered as part of a subnational level, which '*holds the potential for the creation of a multitude of different organisational options for taking into account groups of different kinds in the context of entire states or nations'* (Suksi 2011, 1). This means that there are multiple kinds of sub-national territorial arrangements[73].

According to Benedikter (2009), a basic criterion to understand territorial arrangements is the type of involvement of units in the central government. He argues that '*federated states or regions are generally involved in policymaking'*, while autonomous entities '*have no special rights regarding the central power*,' even if they rule themselves and '*participate in national institutions by democratic means'* (p. 15). Suksi (2011) explains the difference between federalism and territorial autonomy arrangements in terms of the supremacy doctrine, which underlines the exclusive nature of the legislative powers at the sub-state level. According to this author, an '*autonomous territory does not share decision-making power at the national level,* [therefore] *it should also be able to expect that the national government will not attempt to encroach into the sphere of competence of the autonomous entity*' (p. 139). therefore, territorial autonomy would be characterised by the lack of involvement of the subnational unit in policy and decision-making at the national level. However, this requires of a definition of how power transference is made towards the subnational unit.

One of the main concepts to discuss concerning power transference is decentralisation. According to Falleti (2005), decentralisation can be understood as *'a process of state reform composed by a set of public policies that transfer responsibilities, resources, or authority from higher to lower levels of government in the context of a specific type of state'* (p. 328). According to this definition, measures such as privatisation or deregulation would not be part of the process of decentralisation. Falleti (2005) identifies three types of decentralisation: fiscal, administrative, and political (p.

[73] Some scholars discuss 'Regionalism' as a territorial arrangement (Ghai 2000). The concept of regionalism is one over which there is much discussion. According to Behr and Jokela (2011), '*the literature distinguishes between regionalism tout court and the process of regionalization'*. An overview of this group of literature suggests that it departs from the characteristics of indigenous territories; therefore, further exploration in this line was not conducted. See Behr, Timo and Jokela, Juha 2011. Regionalism and global governance: the emerging agenda. Notre Europe. https://institutdelors.eu/wp-content/uploads/2018/01/regionalism_globalgovernance_t.behr-j.jokela_ne_july2011_01.pdf.

328. In contrast, Siegle and O'Mahony (2006) consider these categories as the '*three main dimensions of national-subnational power*' (p. 3), which can be observed in), which are included in Figure 1. Recently, Ryan and Woods (2017) add a fourth dimension, the market[74].

Figure 1. Dimensions of decentralisation

Administrative	Fiscal	Political
• Full or partial transfer of functional responsibilities, such as social services provision, which may include funding and coincide with fiscal decentralization.	• Transfer of financial authority. Involves different institutional settings: increase of transfers from the central government, creation of new sub-national taxes, greater authority to generate own revenues.	• Transfer of political authority through the establishment of election-related and participatory processes. Political actors and issues are partially independent from the national level.

Source: author's own compilation based on Falleti (2005), Siegle and O'Mahony (2006) and Ryan and Woods (2017).

Following Siegle and O'Mahony (2006), power sharing arrangements can be classified into three types: devolution, deconcentration and delegation, included in Figure 2; which can result in many different combinations with the fiscal, administrative and political dimensions. Thus, a decentralisation process may include the three types of power transfer or be limited to some of them, depending on the reasons invoked for its implementation.

According to Ryan and woods (2017), there are two main arguments to promote decentralisation. On the one hand, it is presented as a way to improve efficiency to respond to local needs. On the other hand, it is presented as '*more responsive and accountable to the citizenry*'[75] (p. 24). Therefore, the resulting arrangement responds to the context in which the process is developed and varies according to degree of power transfer, which can go from delegation to full devolution of powers. Since that decentralisation can be implemented for units that are not territorially based; the process of decentralisation describes the way a State functions, rather than the configuration of its parts. In this line of thought, a crucial element to

[74] It relates to deregulation and privatization, fostering governments' divestment of their functional responsibilities. It shifts focus from the government sphere to the involvement of the non-government sector.
75 According to Ryan and Woods (2017), both arguments '*are presumed to enhance the legitimacy of government authority through promoting the welfare of individuals and communities. Decentralization allows for more effective and inclusive decision-making, reduces the distance between bureaucrats and economic agents, and may also play a role in enhancing economic growth*' (p. 24).

differentiate decentralisation from territorial autonomy is the understanding of the latter as invariably linked to a geographically based unit, the territory where autonomy is to be exerted; while the former is to be understood as a condition that describes the functioning of administrative and territorial units.

Figure 2. Power sharing arrangements

Delegation	Deconcentration	Devolution
• Transfer of managerial responsibility for a specifically defined function outside the usual central government structure.	• Transfer of power to an administrative unit of the central government at the field or regional office level. Local officials are typically not elected but appointed. The national government retains control over resources and priorities.	• Creation or increased reliance upon sub-national levels of elected government, which are substantially out of direct control exerted by the central government, yet subject to general policies and laws. Sub-national governments have clear and legally recognised geographic boundaries over which they exercise authority and within which they perform public functions.

Source: author's own compilation based on Falleti (2005), Siegle and O'Mahony (2006) and Ryan and Woods (2017).

Decentralisation and territorial autonomy may coincide in terms of the type of powers that are subject to transfer, as well, they could coincide on the spatial expression of the transfer; however, they differ on the justifications behind their implementation, as well as in the goals that they pursue. Benedikter (2009), identifies another distinction between both concepts, which corresponds to the restrain of the central government in interfering directly in the legal acts of autonomous entities unless a judicial procedure is involved, for example, through the pronouncement of supreme or constitutional courts. In contrast, the central government is fully empowered to intervene in a regime of decentralisation through the control and supervision of the (legal) acts of the decentralised authorities. This author further asserts that a core feature of autonomy are democratic procedures of decision-making; nevertheless, some researchers have criticised modern democracy and what it entails (Santos and Avritzer 2005), especially regarding Indigenous peoples who may have a different approach (Zegada Claure 2011; Gonzales and González 2015). Therefore, descriptions in terms of democracy regarding indigenous territorial autonomy should be made cautiously.

This caution is directly related to the notion of self-determination, through which Indigenous peoples '*have the right to autonomy or self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions* (UN 2007). As the text suggests, the concepts of autonomy, self-government and self-determination[76] are different and not interchangeable. Self-determination, explained in terms of its understanding as '*emerging principles of customary international law'*[77] (Henriksen 2001, 16), corresponds to a right recognised to 'peoples', to collectives, hence its importance for guaranteeing that Indigenous peoples can exert control over their own destiny (Hannum 1992). The definition of 'peoples' offers the possibility to claim that international instruments can be applied to the group to which this denomination is granted; however, this has been subject of controversy (Hannum 1992; Henriksen 2001). Self-determination is regulated by two international instruments, the so called 'twin covenants': the International covenant on economic, social and cultural rights and the International covenant on civil and political rights, both of which entered into force in 1976 (Hannum 1993, 19) and allowed the transition from considering self-determination of peoples as a 'principle', to its current consideration as a 'right' (Henriksen 2001, 7). In contrast, there is no international legal framework for autonomy.

After a 25 years-process, the right to self-determination was included in the text of the United nations declaration on the rights of Indigenous peoples (UNDRIP) despite its perception as a threat to the integrity of States (Henriksen 2001, 14) and its consideration as being '*too ambitious'* (Xanthaki 2009, 30). This constituted the first time that members of the United nations (UN) '*agreed to recognise the unqualified right of self-determination to sub-national groups'*[78] (Xanthaki 2009, 30). Self-determination does imply the right, although not the necessity, of independent statehood (Hannum 1992, 96), hence, the importance of making explicit the distinction between this concept and that of territorial autonomy.

Finally, the concept of self-government[79], is characterised by two elements: 'e*lections to the highest decision-making body and the existence of an executive for the implementation of the decisions of the central body of self-government'* (Suksi 2011, 6). Nevertheless, Hannum (1992) described how participants

[76] A distinction is made by some authors between internal and external self-determination. See Dinstein (2011) or Henriksen (2001) cited in this chapter.
[77] Refers to international obligations arising from established state practice, as opposed to obligations arising from formal written international treaties. According to Article 38 (1) (b) of the International court of justice Statute, customary international law is one of the sources of international law. (LLI, 2003).
[78] Article 3 of the final declaration indicates that: Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development (UN 2007).
[79] Also denominated *Self-rule.*

at the Indigenous peoples' preparatory meeting of the United nations working group on indigenous populations rejected any '*State imposition of governmental or organisational systems and forms without consent by the indigenous people concerned (…) even where the ostensible purpose is to provide a measure of self-rule or autonomy* (p. 96). Therefore, even if the self-governing body has the power to hold elections and is accountable for decision-making and implementation, it may lack of legitimacy for Indigenous peoples if this power is not the result of their own decision or, at least, the product of a joint construction.

The concepts of autonomy, self-government and self-determination, even if closely related, are not interchangeable. Territorial autonomy claims made by Indigenous peoples are framed in the right to self-determination and include, invariably, self-government structures, which should not be externally imposed. The way in which these claims are addressed depends on the conditions within each State concerning the recognition of Indigenous peoples' rights.

3.2.2 Indigenous territorial autonomy

The process of territorial autonomy recognition in Latin America appears to have been triggered by the 'autonomy statute' passed in 1987 in Nicaragua[80], as part of the development of the cycles of juridical recognition (Aylwin 2014c). Thus, scholars concerned with Indigenous peoples in Latin America tend to discuss territorial autonomy in relation rights recognition. As part of the field of 'geographies of social movements', for example, Pickerill and Chatterton (2006), understand autonomy as 'self-legislation' and coin the concept of 'autonomous geographies' as those '*spaces where people desire to constitute non-capitalist, egalitarian and solidaristic forms of political, social, and economic organisation through a combination of resistance and creation'* (p. 730). As well, Lopes de Souza (2016) argues that regional or territorial autonomy in the indigenous movement are not necessarily related to self-management or the overcoming of indigenous hierarchies. Instead, these terms would refer to the right of self-determination against *'power structures, social groups and societies foreign to the local or regional group'* (p. 1304).

Similarly, Naylor (2017) reflects on the need to rethink autonomy according to the declaration of autonomous resistance (*resistencia autónoma)* arising from indigenous groups in Chiapas, as

[80] According to Jordán Ramos (2010), the case of the Kuna people in Panama constitutes '*a reference point in the debates about autonomy in Latin America for other indigenous groups that were seeking recognition of their territories*'(p. 512), such as the Miskitu in Nicaragua, through the creation in 1938 of the comarcas 'Barú' and 'San Blas'. For North America, Zaferatos (1998, 397) presents a detailed description of the situation in the United States, in which the self-governance act (1994) is of major importance. A discussion about Canada can be found in Richardson (2008, 28) or Webster (2016, 11). Cited in this dissertation.

part of the studies of 'geographies of resistance'. This *resistencia autónoma* implies the '*rejection of government assistance, institutions, and power-sharing while also being based in the creation of viable alternatives, such as the civilian governments of the Zapatistas'* (p. 25). This author highlights that community declarations of autonomy are not just about space arrangements, but also about practices. This author provides empirical evidence of how autonomy is exercised and builds her argument over the understanding of autonomy in terms of the absence of state structures[81]. On a side note, González (2015) discusses how the national *zapatista* liberation army (EZLN) promoted '*autonomous processes 'without permission' of the state - the Caracoles, or Juntas de Buen Gobierno (…)* [which] *have been able to create de facto governing spaces* (p. 23). Similarly, Mora Bayo (2015) considers that a distinctive feature of the *zapatista* autonomy in Chiapas *'is that its political-administrative jurisdictions, referred to as autonomous municipalities, exist outside state formal legal recognition* (p. 88). According to this author, the exercise of autonomy does not rule out State regulations since *'State forces constantly manifest their materiality through a quasi-permanent militarization of Zapatista territory, diverse mechanisms of surveillance, the implementation of competing social economic development projects, and through the social effects of 20 years of neoliberal reforms* [82] (p. 88). These analyses emerging from geographies of social movements and the case of the *zapatistas* highlight the tensions with the governments, through their opposing political projects, and contribute to the understanding of the social order around indigenous territories. Nevertheless, they do not provide elements to operationalize the concept of indigenous territorial autonomy.

On a different note, Binder and Binder (2016) discuss cases of autonomous regimes in Nicaragua, Mexico and Colombia, through the *'capability approach'* (p. 303) framework. The authors conceptualise autonomy as a 'tool' which exists in the frame of some State-Nations and focus on problem solving in autonomy implementation. On this ground, Nicaragua is considered as an example of '*inadequate implementation of autonomous regimes'*; Mexico as a case of '*insufficient scope of autonomies'* and Colombia as an example of '*encroachment upon individual rights by the collective'* (Binder and Binder 2016, 300). The authors conclude that the capability approach '*allows an accounting of aspects of autonomous regimes often neglected by conventional legal analysis* (p. 309). In a similar way, Van de Sandt (2007) considers that the recognition of indigenous autonomy is based '*on the presumed capacity of indigenous communities to determine their own future'* (p. 252); which

[81] This conceptualisation of autonomous resistance appears to be closer to secessionist arguments than to territorial autonomy approaches.

[82] The author focuses on analysing justice practice, through which she concludes that *'zapatista practices of justice highlight the limits of neoliberal regulatory techniques, reversing their effects in order to fuel their autonomous decolonial political endeavour'* (p. 103). Her approach is similar to that of Hale (2011), regarding indigenous autonomy as a contestation of neoliberal policies and the oppressive power relationship with the State.

requires, however, consideration of the social dimension of autonomy as an internal process. Based on the case study of the Nasa people of the *resguardo* Jambaló in Colombia, the author points out how *'the recognition of autonomy in itself did not bring solution for many of the problems experienced by indigenous communities'* (p. 253), while external factors *'pose new challenges to indigenous organisations and peoples'* (p. 253). Van de Sandt (2007) considers that there are struggles that *'take place under a highly asymmetrical power relationship between Indigenous peoples and the State'* (p. 254). Nevertheless, the former tends to appropriate favourable elements of State law which '*often become an indissoluble part of the indigenous (Nasa) legal order'* (p. 255).

Discussing Nicaragua, Hale (2011) argues that even if autonomy claims may have contributed to the empowerment of Indigenous peoples; the way in which autonomy unfolded, *'understood as negotiated devolution of authority from state to a given enclosed space, has come to fit too comfortably within the repertoire of the neoliberal state to serve also as these movements' political horizon'* (p. 204). Thus, this author argues that a new approach is needed with more focus on reducing '*ties of dependency and tutelage altogether* (p. 204) than in the passing on authority to autonomous units. Further critics about the implementation of the autonomy statute can be found in the work of Finley-Brook and Offen (2009), González (2011) and Larson et al. (2016). Similarly, Garcés Velásquez (2011) discusses the Bolivian case and argues that there have been a series of 'domestications' in the process of construction of the constitutional assembly[83], as well as in the implementation of indigenous autonomy. According to this author, there has been an accommodation of Indigenous peoples to the modernization efforts of the State as *'the constitutional process has been gradually appropriated by the political class'* (p. 65).

Tockman and Cameron (2014) discuss official plurinationalism[84] and conclude that the progress towards its construction '*has been minimal*' (p. 50). Moreover, the authors consider that while the Bolivian State provides formal recognition of indigenous rights to autonomy, these are constrained in practice. About this constraining, Augsburger and Haber (2018) argue that it is an indicator of the potentials involved in autonomy, because it would *'threaten pre-existing power arrangements and thereby the Bolivian state's developmental project'* (p. 137). These authors compare several processes aimed at the constitution of indigenous original peasant autonomies

[83] As a result, the constitution of 2009 stablished that Bolivia is a social unitary State of Plurinational communitarian law, decentralized and with autonomies.
[84] A discussion of the concept is made by Gustafson (2009). Cited in this dissertation.

(AIOC)[85], including the successful case of Charagua Iyambae, and identify the factors affecting the outcomes of autonomy processes: *'the level of support and opposition between local social forces to AIOC, the level of support for AIOC within local indigenous leadership, and the actions taken by the MAS-government[86] regarding the AIOC initiative'* (p. 153). Gustafson (2009), also discusses the role of governmental support for indigenous autonomies and argues that the emergence of multiple sorts of autonomies *'could become a template for the respatialization of prebendalism'* (p. 1011).

The way in which scholars assess the progress of indigenous autonomy responds to two main streams, according to Gonzales and González (2015)[87]. The first one considers indigenous demands as not radical at all[88], since they are formulated in the frame of liberal citizenship; therefore, this autonomy '*does not necessarily threaten the socio-political configuration and modes of social reproduction and domination of current states'* (p. 1). Within the second stream, autonomy is considered as conducive to transform '*colonizing practices that are embedded in the state and coexist with new forms of neoliberal governance (…)* [especially] *when Indigenous peoples embrace autonomy 'as concrete exercise of rights' (without necessarily seeking the consent of the state)* (p. 2). Despite these contrasting stances, scholars concerned with indigenous autonomy coincide in identifying the interaction between internal and external settings as a key element for studying autonomous regimes, as well as the asymmetries between States and indigenous autonomies. Therefore, their discussions tend to be made in terms of the exercise of power. Nevertheless, the concept itself of autonomy is barely discussed throughout existing literature and their conclusions are highly dependent on the context of investigation, which creates an obstacle for comparing between cases.

In this regard, the work of scholars in the field of international law provides conceptual keys derived from their extensive work with the spatial dimension of the concept autonomy, through the elaboration of the categories of territorial and non-territorial autonomy. A

---

[85] *Autonomías Indígenas Originarias Campesinas* (AIOC) (indigenous original peasant autonomies). These autonomies '*are accorded certain rights such as jurisdiction over indigenous justice and the ability to design their own governing institutions [however; they] do not have control over non-renewable natural resources. Control over natural resources is assigned to the national state'* (Augsburger and Haber, 2018, p. 141).

[86] Governmental party led by Evo Morales.

[87] As part of a special journal issue about Indigenous peoples and autonomy in Latin America published in 2015. See Latin American and Caribbean Ethnic Studies. Volume 10. Contributing authors are Tirso Gonzales, Miguel González; Jason Tockman, John Cameron; Wilfredo Plata; Pablo Ortiz-T.; Mariana Mora and Gustavo Esteva.

[88] Jordán Ramos (2010) also makes this distinction between scholarly streams and identifies other authors such as Gerardo Otero and Héctor Díaz-Polanco. Cited in this dissertation.

preliminary review of non-territorial autonomy [89] literature suggested that this group is not relevant for this dissertation as spatial variables are barely discussed. On the contrary, the concept of territorial autonomy turned out to be fully relevant (Benedikter, 2009; Suksi, 2011).

3.2.3 The concept of environmental sustainability

Some authors consider that the concepts of sustainable development and sustainability '*entail the same dimensions and the same policy implications* (Holden et al. 2014, 131); therefore, they use them interchangeably (Hugé et al. 2013; Holden et al. 2014). The concept of sustainability proposed during the 20th century, which later was related to 'sustainable development, came from the discipline of ecology, where it was used to '*refer to a state or condition that can be maintained over an indefinite period'* (Du Pisani 2006, 91). Gudynas (2010) links the emergence of the concept of sustainability to the use, by the end of the decade of 1970, of the notion of 'sustainable harvest' or 'sustainable extraction' of natural resources within the limits of their replacement rate (p. 44).

According to this argumentative line, sustainability is strongly connected to an ecological perspective; however, the lack of a unified definition has led to the emergence of multiple understandings. Back in 1991, Sharachchandra Lélé argued that '*any discussion of sustainability must first answer the questions "What is to be sustained? For whom? How long*? (Lélé 1991, 615). Daly (2007) responds to the question of what is to be sustained from the field of Economics, by affirming that '*it is the economy that is being sustained, and the biosphere that is doing the sustaining* (p. 36). Nevertheless, this question is barely answered and the term 'sustainability' has become an adjective which accompanies concepts such as *social sustainability* (Vallance et al. 2011), where the ecological base is blurred despite being discussed under the frame of sustainable development, or *ecological sustainability* (Károly, 2011; Holden et al. 2014), where the conjunction of both words suggests that sustainability would not always be ecological. On this regard, Gudynas (2011) considers that discussions about the wording, the scope of the term and the variety of actors involved, led to the use of the concept of 'sustainability' in ways that had nothing to do with its ecological roots (p. 31).

[89] In the case of non-territorial autonomy, it has been defined as one of the tools that states have to accommodate ethno-cultural diversity Malloy (2015). Literature on this field refers to personal, cultural, administrative and functional autonomy; however, the distinctions between these are difficult to grasp and depend on the author's perspective. For instance, Hannum (1992, 4) refers to personal and political autonomy; Lapidoth (1997, 280) refers to personal autonomy; Ghai (2000, 9) refers to corporate autonomy; Suksi (2011, 6) refers to functional and non-territorial cultural autonomy.

This can be observed through the definition of 'sustainable development' proposed in the Brundtland report, which states that

'Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities. But technology and social organisation can be both managed and improved to make way for a new era of economic growth (WCED 1987, par. 27).

This definition of sustainable development has been criticised as to constitute an oxymoron, for it considers economic growth as sustainable, even though nothing physical can't grow permanently (Gudynas 2011, 30; Bermejo Gómez 2014, 16). Further criticism highlights that the term serves neo-liberal interests, because it does not question the ideology of economic growth nor challenges the consumer culture (Du Pisani 2006, 93). Moreover, some authors consider that the concept of sustainable development is no longer useful in guiding policymaking, as it '*has become so comprehensive and complex'* (Holden *et al.* 2014, 130). In contrast, authors like Holling et al. (2002) assert that '*sustainability is the capacity to create, test and maintain adaptive capability. Development is the process of creating, testing and maintaining opportunity. The phrase that combines the two, sustainable development, rather than being an oxymoron, represents a logical partnership'* (p. 403); while many other authors use the term without much discussion about its scope (DeFries et al. 2012; Steffen et al. 2015). In line with the critical views of the concept of sustainable development, the term is avoided in this dissertation. Furthermore, the debates about the connotations of the second component of the term were also considered, concerning the historical context in which the notion of development emerged.

Du Pisani (2006) recognises a first approach to the idea of development in relation to the notion of progress, much in the sense in which the theory of evolution organises life, as a linear, ever improving process. According to this author, a general optimistic perception was common at the beginning of the 20th century about the *'almost unlimited possibilities opening up because of scientific and technological advances'* (p. 87), which was not completely destroyed by the world wars and was, in fact, renewed as of the decade of 1950. Similarly, Escobar (2007) considers that the years following the second world war were crucial for the emergence of the concept of development. The author identifies how, when the United States president Harry

Truman talked about the 'New deal'[90] in his inaugural address, a binary category was created through his appeal to solve '*the problems of the "underdeveloped areas" of the globe'* (Escobar, 1995, p. 3). This inaugural address made explicit the aim of creating the conditions to reproduce, worldwide, the distinctive features of economically advanced societies. Therefore, the conceptualisation of peoples in need of development, as well as the events and programs that unfolded, marked the '*invention of development'* (Escobar 1995, 30).

Critics have shown how the concept of 'development' became bounded to that of economic growth as the way to solve inequality and poverty[91] (Gudynas 2010). Furthermore, the assumption of development resulting in '*continuous improvement of the human condition'* (Du Pisani 2006, 89) was challenged, not only because of the growing gap between high and low-income societies (Unceta Satrústegui 2009), but also because environmental concerns were raising[92]. Thus, several proposals emerged to 'fix' the problems of development[93], as the questioning occurred worldwide[94]. Furthermore, feminist studies have showed that the gap between men and women had increased, as a result of development strategies that '*led to the marginalization of women from production'* (Unceta Satrústegui 2009, 13). As well, the proliferation of military regimes and dictatorships in America, Asia and Africa showed that productive expansion could occur in the absence of freedoms and that their constraining '*had been justified, precisely, for the sake of development'* (p. 13). During the decade of 1980 development was questioned in relation to the persistence of pollution, rising crime rates and the spreading of AIDS. As well, people

[90] The inaugural address states that '*More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas (…) I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life. And, in cooperation with other nations, we should foster capital investment in areas needing development*' (Truman 1949).

[91] This fostered that modernization and dependency theories would become the dominant theories of development (Du Pisani, 2006), which, despite their differences, shared principles such as industrialization and higher efficiency on natural resources exploitation (Gudynas 2011). As well, they coincided in failing to question economic growth and the notion of underdevelopment (Unceta Satrústegui 2009).

[92] It was the publication in 1972 of the report 'The Limits to growth', which produced the most important fissure to the notion of development. The purpose of the report was to analyse the global growth tendencies regarding world population, industrialization, food production and natural resources exploitation; rather than an assessment of the state of the environment (Gudynas 2011, 25). Nevertheless, the report succeeded in placing the need to challenge unrestricted economic growth on the political agenda (Du Pisani 2006, 90).

[93] Eco development, mentioned as early as 1973 by Maurice Strong (Unceta Satrústegui 2009); the '*Modelo Mundial Latinoamericano'* (World Latin-American model) proposed in 1975 under the coordination of the Bariloche Foundation (Gudynas 2011); the Zero-growth option suggested in the 'Limits to growth' report (Du Pisani, 2006), the proposal of Dag Hammarskjöld Foundation for 'Another development' (Gudynas 2011); as well as the 'small is beautiful' type of notion (Du Pisani 2006).

[94] Among these questionings, the Declaration of Cocoyoc in 1974 constituted a milestone (Gudynas 2011) by stating, for example, that 'w*e believe that 30 years of experience with the hope that rapid economic growth benefiting the few will "trickle down" to the mass of the people has proved to be illusory'* (p. 3).

gained awareness of *'the human costs of structural adjustment programs'* (ul Haq 2003, 21) [95]. In Latin America, the discussions about development resulted in the publication of 'human scale development' in 1986, proposed by Manfred Max-Neef, Antonio Elizalde and Martin Hopenhayn, which established the difference between needs and satisfactors, as well as the understanding of poverty as a concept that depends on unsatisfied needs (Gudynas 2011). More recently, the indigenous Andean concepts of *Sumak Kawsay and Suma qamaña*[96] have been discussed as they question development and propose changes in '*the relation with nature, the decolonization of knowledges, different ethics to recognise and assign values, the abandonment of pretension of instrumentalizing and manipulating of the environment'* (Gudynas and Acosta 2011, 81). Finally, some authors have criticised development itself (Ziai 2007), declaring the impossibility of its reformulation (Agostino 2007).

Therefore, considering the discussions about still unsolved contradictions embedded in the concept of development, and by extension, sustainable development, it is considered here that its conflation with the concept of sustainability is inadequate, therefore, the literature review is built over the differentiation between these terms and emphasises on the concept of 'environmental sustainability' instead of merely 'sustainability', since the former is closer to the scope of this research.

3.2.4 Types of sustainability

When discussing sustainability, several scholars refer to a typology developed in the field of economics which characterises sustainability in terms of its strength (Dobson 1996; Hopwood et al. 2005; Sala et al. 2015). According to Daly (2007), two opposing paradigms in economy's concern for sustainability emerged[97], 'weak' and 'strong' sustainability, which had a contrasting

[95] In this context, a favourable climate was generated for the preparation of an annual human development report in 1989, which later led to the first Human Development Report in 1990. The Human development paradigm was also built on the work of Amartya Sen about capabilities and functioning. See: Fukuda-Parr, Sakiko. 2003. The human development paradigm: operationalizing Sen's ideas on capabilities. Feminist Economics. 9, 2-3: 301-317. https://doi.org/10.1080/1354570022000077980

[96] *Sumak kawsay* is translated from Kichwa language as *'Buen vivir'* in Spanish and 'well-being' in English. *Suma qamaña* comes from the Aymara language and has been translated as '*Vivir bien'* in Spanish or 'living well' in English. Both concepts gained momentum after their inclusion in the national constitutions of Ecuador and Bolivia, in 2008 and 2009 respectively. See Vega Ugalde, Silvia. 2014. El orden de género en el sumak kawsay y el suma qamaña. Un vistazo a los debates actuales en Bolivia y Ecuador. *Íconos* 48: 73-91. http://revistas.flacsoandes.edu.ec/iconos/article/download/1210/1107/

[97] According to this author, the concern of economists for sustainability can be traced back to 1848, when John Stuart Mill exposed the idea of an 'Stationary State". Daly mentions economists like Kenneth Boulding, Ernst Schumacher and Nicholas Georgescu-Roegen as the ones who set the stage for ecological economists and to a lesser extent, for those engaged in resource and environmental economics (Daly 2007, 13).

understanding of the kinds of capital that constitute the resource base: man-made capital, natural capital, human capital, and moral and cultural capital (Holden et al. 2014). According to Daly (2007), *'most neoclassical economists believe that man-made capital is a good substitute for natural capital and therefore advocate maintaining the sum of the two, an approach called weak sustainability* (p. 15). As for strong sustainability, ecological economists consider man-made and natural capital as complements rather than substitutes, where the latter *'should be maintained on its own, because it has become the limiting factor. That goal is called strong sustainability'* (p. 15)[98].

Another elaboration on this conceptualisation refers to the existence of three streams in sustainability: weak, strong and super strong (Gudynas 2010), where the latter corresponds to the consideration of the environment as having multiple values such as ecologic, cultural, religious and aesthetical, as well as the consideration of the intrinsic value of nature. In this stream, the concept of 'natural capital' is replaced by 'natural patrimony', which is understood as something that should be maintained for future generations, not necessarily subject of market transactions. Therefore, economic growth is abandoned as the driving force of development and emphasis is made on quality of life (p. 47).

The discussions about sustainability are usually made according to the '*triple bottom line'* (Holden et al. 2014), that is, according to social, economic and environmental dimensions, following the publication of the Brundtland report. In this regard, Hicks et al. (2016) posit that key social concepts should be considered when addressing sustainability. The authors discuss how inequality influences agency and propose using already available indicators to measure well-being, values, agency and inequality. According to the authors, while it is commonly agreed that it is desirable *'to increase wellbeing and agency and to reduce inequality, injustice, and imbalances of power (…) there is no desirable direction of change for values or culture. Instead, these concepts facilitate understandings of how sustainability goals manifest and how policies can be crafted* (p. 39). The authors do not present an explicit definition; nevertheless, their argument suggests that sustainability should be understood as the integration of the four. Similarly, Vallance et al. (2011) discuss sustainability and advocate for maintaining the complexity of the concept, instead of trying to develop a single definition. Therefore, they call for considering *'the adverse impacts some eco-strategies have on already disadvantaged groups, combined with a better understanding of the ways in which technical aspects of sustainability resound in everyday life'* (Vallance et al, 2011, 347).

[98] According to Dobson (1996), Herman Daly has also referred to 'absurdly strong sustainability' as part of a debate about substitutability. See page 410 of the work of Dobson, cited in this dissertation.

Early in the scholarly debate, Dobson (1996) distinguished between 'definitional' and 'discursive' forms of environmental sustainability, where the first one has the problem of too many definitions available, while the second describes the '*evolution of terms such as 'sustainability', 'ecodevelopment' and 'sustainable development', and such an approach has the merit of giving a more rounded and complete account than a single definition could ever do'* (p. 402). Focusing on the second kind, the author develops a typology of conceptions of environmental sustainability which is constructed based on the notion of substitutability. According to this author, the key question to distinguish between conceptions of environmental sustainability is what is to be sustained? to which the author finds four types of answers. The answers are identified based on the distinction between capital and resource, which the author explains as the difference between instruments of labour or capital and raw materials or resources. In his words, '*Marx's 'instruments of labour' would be a particular example of what I have called 'human-made capital', and his 'raw materials' would be what I have called 'natural capital''* (p. 409); therefore, conceptions of environmental sustainability vary according to what kind of capital is to be sustained[99]. These conceptions of sustainability contribute to identify views regarding what is to be sustained, why, and the degree of substitutability of human-made for natural capital. As well, sustainable development could also be understood as a theory of environmental sustainability framed in the argument that '*a particular interpretation of the causes of unsustainability leads to a determinate view of the remedies for it'* (p. 422)[100].

More recently, the concept of sustainability has been addressed through 'frameworks', which coincide in discussing sustainability without providing a particular definition. Sala et al. (2015), for example, propose a systemic framework for the appraisal methodology sustainability assessment, where they are less concerned with a specific definition of sustainability and focus on its measurement. These authors consider that frameworks are defined by the different values and principles assigned to sustainability and identify four main interpretations: ecological, economic, thermodynamic and ecological-economic and public policy and planning

[99] The author identifies four groups. In the first group, one conception aims at sustaining 'total capital', that is human made plus natural capital. The second is to sustain ecological processes that have instrumental value for humans, also called 'critical natural capital'. Both of these conceptions focus on human welfare exclusively. The third group corresponds to those conceptions that aim at sustaining 'irreversible natural capital', which includes concerns not only for humans but also for the intrinsic value of nature. Therefore, '*this conception of environmental sustainability has no room for the substitutability of human-made capital for irreversible natural capital*' (p. 415). Finally, the fourth type of conceptions aims at sustaining 'units of significance', where the concept of substitutability is irrelevant. In these conceptions, '*the physical stock interpretation of natural capital is not exhausted by the importance of that stock to the maintenance of human welfare'* (p. 417).

[100] The author argues that 'sustainable development, therefore, amounts to a strategy for environmental sustainability because of the belief that a particular form of development will provide the conditions within which environmental sustainability can be guaranteed' (Dobson 1996, 422).

theory approaches. A different framework is proposed by Christen and Schmidt (2012), regarding 'conceptions of sustainability', who argue that the work of Dobson (1996) has methodological flaws because '*he studies theories of sustainability to elaborate the conceptual questions. Proceeding in this way, it is hard to see how exclusion of doubtful conceptions could be permitted*' (p. 402). The authors propose adopting a Meta-perspective and claim to '*eschew definitions to achieve a sound basis for a concept of sustainability*' (p. 401). However, they discuss the concept of sustainability using what they call 'the sustainability problem', based on the Brundtland report. Therefore, although they claim to take a theory-external approach, they fail to recognise that there are assumptions about sustainability underpinning that report. This raises questions about their ability to surpass their own critics about Dobson's work.

The work of Dobson (1996) is particularly useful to make sense of the multiple approaches currently available in scholarly literature. However, in contrast to this author's position against a definitional approach; it is considered here that a definition of environmental sustainability is crucial for the structuring of the research, and for sustainability science in general, for the sake of achieving coherence. Therefore, this research builds on the arguments of Lélé (1991) about how the differentiation '*between ecological and social sustainability could be a first step toward clarifying some of the discussion*' (p. 615*)*. According to this author*,* there were interpretation problems in the debates about the meaning of sustainable development, fostered by semantic confusions where '*most people use the phrase 'sustainable development' interchangeably with 'ecologically sustainable' or 'environmentally sound development'* (p. 608). According to this author there are connotations of literal, social and ecological sustainability, where the first one means sustaining anything, the second means sustaining social basis of human life and the third one means sustaining ecological basis of human life, which has ecological and social conditions.

Lélé (1991) explains that in one of sustainability's connotations it is taken '*to mean "the existence of the ecological conditions necessary to support human life at a specified level of well-being through future generations," what I call ecological sustainability*' (p. 609). This author further explains that scientists have focused in the ecological conditions like '*biophysical "laws" or patterns that determine environmental responses to human activities and humans' ability to use the environment*' (p. 609); however, he advocates for '*the realization that in addition to or in conjunction with these ecological conditions, there are social conditions that influence the ecological sustainability or unsustainability of the people-nature interaction*' (p. 610). Consequently, the definition labelled by this author as 'ecological sustainability' is compatible with the third conception of environmental sustainability described by Dobson (1996). Therefore, considering that the connotations given to the term

'ecological' tend to overlook the role of humans in ecosystems, the use of the term 'environmental' is favoured in this dissertation over the term 'ecological'.

However, very few works discuss explicitly the concept of environmental sustainability, whichever definition used, in relation to Indigenous peoples, their territories and autonomy. Explicit links between Indigenous peoples and sustainability are found in Prado et al. (2012) and Shepard et al. (2010), where researchers' focus is on hunting yields and modelling. However, this approach to sustainability refers to hunting sustainability exclusively. More recently, Le Tourneau (2015) discusses sustainability in indigenous territories in the Brazilian Amazon. However, this author uses notions such as 'environmental preservation', 'environmental integrity' or 'environmental conservation' as synonyms of sustainability. Therefore, when the author concludes that '*most "sustainable" initiatives in indigenous territories were conducted according to western definitions of this concept and have yielded mixed results'* (p. 10), it is difficult to understand which benchmarks were used to support such conclusion. Beyond these works, no further research was found including the concepts of indigenous autonomy, territories and environmental sustainability. Therefore, the following section reviews the literature that is closer to addressing the intersection between these concepts.

3.2.5 Indigenous management of natural resources

The concepts of local and traditional knowledge[101] have been *'discussed seriously only since the 1990s'* (Berkes 2009, 22), when scholars started to recognise *'that such knowledge can contribute to the conservation of biodiversity, rare species, protected areas, ecological processes and to sustainable resource use in general'* (Berkes et al. 2000, 1251). Traditional knowledge is characterised as '*local and context-specific, transmitted orally or through imitation and demonstration, adaptive to changing environments, collectivized through a shared social memory, and situated within numerous interlinked facets of people's lives*' (Mistry and Berardi, 2016). Despite critics concerning the assumption that indigenous knowledge always produces positive outcomes (Huntington 2000), as well as the questioning of the '*dichotomy between indigenous and western, or traditional and scientific knowledge'* (Agrawal 1995, 433); research about indigenous knowledge has increased in the last years. Moreover, some researchers argue that Indigenous peoples and their knowledge systems '*carry insights that are*

[101] Commonly referred to as Traditional Ecological Knowledge (TEK). This concept was included in the 1994 convention on biological diversity (CBD) in article 8j. For an academic review of research on indigenous knowledge and natural resources see the work of Berkes et al. (2000), cited in this dissertation.

complementary to science, in terms of scope and content, and also in ways of knowing and governing social-ecological systems during turbulent times and articulating alternative ways forward' (Tengö et al. 2017).

Therefore, scholars have approached indigenous knowledge from multiple perspectives in relation to environmental concerns. For example, it has been addressed concerning ecosystem services (Pert et al. 2015) and nature's contribution to people (Díaz et al. 2018; Peterson et al. 2018), as well as from biocultural studies (Oviedo and Maffi, 2000; Davidson-Hunt et al. 2012). However, research on indigenous knowledge has been developed specially in biodiversity conservation, where researchers argue that Indigenous peoples have the ability to conserve and to augment biodiversity '*by manipulating the landscape'* (Gadgil et al. 1993, 151). This argument is based on research that shows how indigenous societies in the past *'have permanently and significantly transformed, built, and maintained environments to such a scale that they have determined local and regional species diversity, environmental richness in general, soil quality* (Balée and Erickson 2006, 10). These findings contribute to explain why scholars argue that '*most landscapes today are considered to be anthropogenic'* (Pretty et al. 2009, p. 103). As well, they suggest that the understanding of 'pristine' as something that has not been affected by humans, should be reviewed carefully.

Smith and Wishnie (2000) provide key variables to discuss the concept of 'conservation'[102], showing that the use of closely related concepts as equivalents may be misleading. These authors coin the concept of 'ecological engineering', through which humans are considered *'primary agents of biological disturbance'* (p. 498), which have produced engineered ecosystems. Moreover, these authors state that *'evidence suggests that environmental perturbations of moderate intensity and frequency can often enhance biodiversity'* (p. 498). However, human societies not always have a positive impact on biodiversity and these authors warn against '*over-generalized or idealized expectations concerning the bases of environmental belief and practice in indigenous or small-scale societies*' (p. 516). Furthermore, some authors have questioned Indigenous peoples' ability to conserve

[102] According to these authors, in order '*to qualify as conservation, any action or practice should satisfy two criteria: It should (a) prevent or mitigate resource depletion, species extirpation, or habitat degradation, and (b) be designed to do so'* (Smith and Wishnie, 2000, 501). Therefore, '*conservation is inherently much harder to verify empirically than is depletion, for one must determine not only that coexistence or sustainable use occurs, but also that it is due to human actions designed to secure this end*' (p. 502). The pitfalls in using the concept of conservation shown by the work of Smith and Wishnie (2000) are considered for this dissertation, therefore, the use of this concept is avoided.

biodiversity[103] (Terborgh 2000) and examples have been provided of active depletion caused by indigenous worldviews (Krech 1999)[104].

The debate about the role of Indigenous peoples in conservation has also raised criticism towards conservationist approaches that promote the bounding of protected areas, because of a limited efficiency in achieving conservation goals and because they '*have been implemented at costs to local people in order to achieve global benefits'* (Alcorn 1993, 424). The impact of protected areas over Indigenous peoples has been documented by several scholars (Arias 2009; Shepard et al. 2010; Stevens 2013) and recently, Lyver and Tylianakis (2017), have identified how conservation policies that limit the use of flora and fauna can interfere with the relationships that Indigenous peoples have with nature, resulting in undermining '*the people who could serve as the first line of defence in conservation'* (p. 142).

The spatial dimension of indigenous conservation has been addressed mainly through the concept of indigenous community conserved areas (ICCAs)[105], which argues in favour of their potential to achieve effective conservation (Borrini-Feyerabend 2010, 7; Garnett et al*.,* 2018) and their articulation to protected areas systems through collaborative approaches (Berkes 2009; Premauer 2013). Furthermore, some scholars study the effectiveness of conservation in indigenous territories in contrast to other governance regimes (Schleicher et al. 2017) and the relation between titling lands to Indigenous peoples and deforestation reduction (Blackman et al. 2017). The interest on climate change (RRI 2016) and deforestation[106] in indigenous territories is based on the premise that '*indigenous lands contribute substantially to maintaining carbon stocks and enhancing biodiversity relative to adjoining territory'* (Mistry and Berardi, 2016, p. 1274).

However, the rationale behind these approaches, even if not explicitly recognised, relies on valuing Indigenous peoples, their resources and territories, as long as low levels (or none) of

---

[103] According to Smith and Wishnie (2000), '*low human population density, low demand for a resource, or limited technology can be expected to contribute to many instances of sustainability, with any conservation being an incidental by-product'* (p. 501).

[104] The scholarly debate developed after the article of Smith and Wishnie (2000) is reviewed by Hames (2007). See: Hames, Raymond. 2007. The Ecologically Noble Savage Debate. *Annual Review of Anthropology* 36, 1: 177-190. https://doi.org/10.1146/annurev.anthro.35.081705.123321

[105] These areas have been defined as '*natural and/or modified ecosystems, containing significant biodiversity values, ecological benefits and cultural values, voluntarily conserved by Indigenous peoples and local communities, both sedentary and mobile, through customary laws or other effective means'* (Borrini-Feyerabend 2010, 3). The international debate about these areas was fostered by 'two key events: IUCN's Fifth World Parks Congress (WPC) in Durban in 2003 and the Seventh Conference of Parties to the convention on biological diversity (CBD COP7) in Kuala Lumpur in 2004' (Berkes, 2009, 19).

[106] Several authors discuss the role of Indigenous peoples in climate change, especially regarding REDD schemes. As this literature focuses on avoidance and reduction of CO_2 emissions, the territorial perspective is usually blurred. Therefore, no further exploration of this literature was conducted.

land use transformation[107] are maintained. The assumption here is that if natural covers remain fundamentally unchanged, habitat loss and CO_2 emissions are avoided, hence, ecosystems can persist in time without being negatively affected. However, if keeping ecosystems unchanged means that indigenous traditional ways should also remain unchanged, then stereotyped notions about Indigenous peoples emerge, such as that of '*ecologically noble savages'* (Redford 1991). These notions consider that '*Indigenous peoples are the prototypical environmentalists, living harmoniously with nature'* (Richardson 2008, 6); however, if Indigenous peoples are not able to comply with these expectations, they are portrayed as responsible for environmental decline. On this regard, Nadasdy (2005) argues that the controversy about *'whether indigenous people are or are not ecologically noble is a spurious one, since it necessarily entails evaluating their behaviour according to imposed Euro-North American cultural assumptions'* (p. 321)[108]. Similarly, Erlandson and Rick (2009) argue that approaches that portray Indigenous peoples either as conservationists or agents of depletion *'ignore the wide range of behaviours that might be expressed by a succession of individuals or groups within a single region over long stretches of archaeological time'* (p. 6).

Therefore, the inputs provided by indigenous knowledge literature appear to be useful in terms of the identification of a distinctive set of concepts and practices that influence Indigenous peoples' approach to environmental sustainability, which are based on their worldviews. However, these must be critically approached in order to avoid a stereotyped analysis. In contrast to the lens of indigenous knowledge, studies from the perspective of natural resources management focus on the intensive interaction between Indigenous peoples and their resources, less because of their knowledge and worldview and more because of their condition of local actors. Hence, the interest of natural resources management researchers on indigenous arrangements for natural resources management, which are designed at a local level.

According to Brosius et al. (1998), the emergence of an international movement towards novel linkages between social justice and environmental management allowed for the promotion of '*forms of local resource management that might support and be supported by emergent transnational goals of social justice, environmental health, and sustainability'* (p. 158), which have been denominated

[107] Holt (2005) discusses this as the 'Catch-22' in conservation, where protectionists '*ascribe conservationist ethics to people in a state of limited technology, subsistence production, and low population pressure, and conversely view people as incompatible to conservation when they have modern technologies, market involvement, and higher population densities'* (p. 207).
[108] Moreover, the author reflects on the fact that '*the concepts of conservation and environmentalism are of Euro-American origin to begin with, thus rendering any attempt to use these concepts to classify indigenous ideas and practices -regardless of how subtly or precisely they have been defined - extremely problematic'* (p. 294).

community-based natural resource management (CBNRM)[109]. This approach is based on three premises: '*that local populations have a greater interest in the sustainable use of resources than does the state or distant corporate managers; that local communities are more cognizant of the intricacies of local ecological processes and practices; and that they are more able to effectively manage those resources through local or "traditional" forms of access'* (Kellert et al 2000, 158).

In parallel to the research on CBNRM, studies of common-property of natural resources were also developed. Both theoretical approaches ended up converging because of their emphasis on small human collectives. Research on common property consolidated after the publication of the article in 1968 in which Garret Hardin coined the expression 'the tragedy of the commons' to '*symbolize the degradation of the environment to be expected whenever many individuals use a scarce resource in common'* (Ostrom 1990, 2)[110]. As a result of the debates contradicting this approach, the research produced in the field of common property *'has shown communities to be successful and sustainable alternatives to state and private management of resources' (*Agrawal and Gibson 1999, 634). Several authors have fused community-based natural resources management with common-property theory, where field-based studies in the latter have '*documented many cases of successful collective management of natural resource management'* (Poteete et al. 2010, 49). Agrawal and Gibson (1999), for example, discuss the concept of community and its operationalisation regarding what they call '*resource conservation and management'* (p. 630). Using both terms, conservation and management interchangeably, these authors argue that '*renewable resources (...) have been, are being, and will always be used by people; those who wish to conserve must incorporate use and management in their strategies'* (p. 641). Later, Quinn et al. (2007) discuss common pool resources (CPR) '*management regimes'* (p. 101), focusing on how communities '*continue to manage their access and use of CPRs using common property regimes* (p. 110). Cox et al. (2010) depict the relation between the two theoretical lines by discussing the complexity of the interaction between social and natural systems: '*communities of users managing common pool resources (CPRs) such as forests or fisheries are excellent examples of this complexity. Understanding these situations is important given the (…) role that communities often play in natural resource management in diverse settings worldwide'* (p. 45).

[109] Closely related approaches can be found such as community natural resource management, community forestry, community wildlife management, comanagement (Kellert et al. 2000) or Community-based environmental management (Maynard and Jacobson 2019).

[110] According to Ostrom (1990), earlier similar conceptualisations were made by Aristotle, Hobbes; William Forster Lloyd and John Dales. See page 3. Ostrom (1985) considers, as well, that in addition to Hardin's biological perspective, the earlier work of the economist Mancur Olson (p. 4), was crucial for most of the theoretical discussions of common pool resources.

Ostrom et. al. (1999) defined CPRs as those that *'include natural and human constructed resources in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others'* (p. 278). The differentiation of types of property regimes is crucial for CPRs research. These can be of five kinds: 'open-access' or 'no ownership'; communal; group or common-property ownership; individual or private ownership; government ownership (Ostrom et al. 1999). This differentiation is the key for identifying the flaws in Hardin's propositions, which reflected the conventional theory of property rights under which '*inefficient use of communal property leading to degradation or depletion appeared inevitable'* (Poteete et al. 2010, 86). The use of CPR lenses usually involves engaging with *'a paradigm of 'new institutionalism' for understanding CPR management where the emphasis is on institutional arrangements or the 'rules of the game''* (Quinn et al. 2007). The emphasis on institutions contributes to document '*the self-organization and self-regulation capability of communities to solve the exclusion and subtractability problems of the commons'* (Berkes 2006, 10). Researchers in this field have '*highlighted the important time- and place-specific knowledge that members of local communities possess and the institutional arrangements they forge to achieve successful, local level resource management'* (Agrawal and Gibson 1999, 633).

Most of the CPR literature is focused in how a particular group of resources is managed such as fisheries (Basurto 2005; Islam and Berkes 2016), game (Sirén 2006) or forest resources (Ghate 2000; Schroeder and Castillo 2013). In contrast, Bremner and Lu (2006) analyse the state of the art about institutions established for natural resources management by Indigenous peoples of the Ecuadorian Amazon. The authors indicate that there are '*diverse institutional arrangements and de facto internal rules regarding withdrawal rights to various resources and alienation rights for land'* (p. 516). Nevertheless, these authors '*do not assess the effectiveness of the de facto rules and norms governing withdrawal rights. Thus, little can be concluded about the ability of indigenous institutions to monitor use and enforce rules of non-compliance'* (p. 516). Other works discuss about decentralization in natural resources management, exploring the idea that '*decentralisation of authority to those social formations that are located near the resource might work better'* (Agrawal and Gibson 1999, 634). In this case, literature concerning Indigenous peoples usually focuses in forest resources (Ribot et al. 2006; Larson et al. 2015; Gebara 2018), where authors identify institutional limits for decentralisation. Moreover, Ribot et al. (2006) argue that the approach of decentralisation advocates is based on the belief that greater efficiency, equity and involvement of local people in decision-making '*will result in more effective local investments and management and ultimately in more socially and environmentally sustainable development'* (p. 1865).

A final coincidence between research in the field of community-based natural resource management and common-property scholarship, is how '*community-based management systems are inferred to be successful, not because conservation or sustainability can be shown, but because they have survived for long periods through various crises'* (Berkes 2006, 3). Then, a further assumption is made by considering that the success in maintaining natural resources can be extrapolated into the future. This assumption is the one that allows researchers to link their findings with the notion of environmental sustainability. The characteristics of this link, however, remain undertheorized.

Drawing upon both theoretical lines, some scholars have conducted research concerning the management of natural resources in indigenous territories under autonomy. This has been made mainly for the North Atlantic (RAAN) and the South Atlantic (RAAS) regions of Nicaragua. Finley-Brook and Offen (2009), for example, argue that '*eastern Nicaragua's communal lands fit within the larger concept of common property'* (p. 348), in terms of the definition of boundaries and resource appropriators as pre-conditions to enforce rules and impose sanctions. These authors criticise instutionalisation of common property and suggest that it encourages '*unsustainable extraction'* (p. 360). Moreover, the authors argue that it encourages Indigenous peoples to view *'communal property and resources through the lens of economics, and to value resources for the capital they can leverage'* (p. 360). However, these authors link their discussion with commons literature without paying attention to the key elements to characterise CPRs, which are the difficulty of exclusion and subtractability[111]. Moreover, scholars in the commons literature argue that '*the prediction that resource users are led inevitably to destroy CPRs is based on a model that assumes all individuals are selfish, norm-free, and maximisers of short-run results'* (Ostrom et al. 1999, 279). Therefore, since the analysis of Finley-Brook and Offen (2009) does not elaborate on indigenous institutional arrangements, it is difficult to understand how they reach their conclusions concerning a negative scenario for the sustainability of natural resources[112].

Larson and Lewis-Mendoza (2012) also discuss the RAAN, using a multilevel governance lens to analyse the implementation of decentralisation and devolution processes in four sub-

[111] The problems related to CPRs occur when 'resource users interact without the benefit of effective rules limiting access and defining rights and duties, substantial free-riding in two forms is likely: overuse without concern for the negative effects on others, and a lack of contributed resources for maintaining and improving the CPR itself' (Ostrom et al. 1999, 279). Moreover, the authors affirm: '*that Ostrom (1990) would likely define the common property institutions in eastern Nicaragua as fragile, or even institutional failures, is not our central concern*' (Finley-Brook and Offen 2009, 348).

[112] Furthermore, their conclusions appear to respond to a tendency of '*portraying indigenous cultures as internally homogeneous or, alternatively, as losing their culture due to interactions with markets or outsiders'* (Erazo 2013, 16), which may oversimplify analysis. Agrawal and Gibson (1999) also discuss this matter, see Section b, 'what makes community'.

national levels: regional, municipal, territorial and communal[113]. According to these authors, the jurisdiction of subnational levels continues to be restricted despite formal recognition, resulting in a situation in which Indigenous peoples '*do not exercise effective decision-making power over their territories and natural resources'* (p. 194). These authors highlight the importance of understanding power relations and advocate for empowering local leaders *'by increasing their understanding of their own territories and their capacity to negotiate, fostering conditions for the design of endogenous future plans for their territories'* (p. 197). Nevertheless, these authors focus more in identifying how the situation should be rather than on the consequences of decision-making over the current state of natural resources and their continuation in the future.

Similarly, Finley-Brook (2013) discusses the RAAN regarding community forestry and describes the region as a '*mosaic of levels and types of territories governed by conceptually distinct institutions with different power claims and access to resources'* (p. 312). However, her analysis differs from that of Larson and Lewis-Mendoza (2012) with regard to what she calls *'windows of opportunity for decentred decision-making'* (p. 326), that is, the possibility of deciding over land titling at the regional level. This author considers that autonomy and self-governance are boosted by with land demarcation and titling, since the absence of tenure security *'represents a significant obstacle to sustainable and participatory forestry in the RAAN. With titles recognizing land ownership, RAAN populations would have greater power to decide when and on what terms they choose to participate in external markets'* (p. 329). Nevertheless, despite the detailed analysis made by this author, the mixing of local and regional scales in the discussion about autonomy and self-governance, does not provide clarity about how the distribution of power is made. As well, this author does not elaborate on how sustainable forestry is affected by land titles.

In another work about Nicaragua, Larson (2010) discusses the concepts of property and authority. This author argues that the legal frame enacted for the autonomous regions in 2003[114] also determines which authorities are recognised. Thus, other type of authority is fostered known as the '*legal representative of the territory'* (p. 1150), which does not correspond to the customary authority. Larson (2010) discusses the tensions between authorities over access to forest resources and the '*assignment of communal lands to households*' (p. 1148), through which she illustrates how the creation of boundaries and property constitute prerequisites for the exercise of authority. This author concludes that the Nicaraguan case shows how '*the*

[113] In this setting, the regional governments '*have veto power over central government investment decisions. Most other specific powers and responsibilities regarding natural resources, however, overlap with central ministry jurisdictions and must be negotiated*' (p. 194).
[114] Law 445 or 'communal lands law'.

configuration of territory shapes access to resources; and the configuration of authority shapes power over resources - and over people' (p. 1151). The work of this author provides a clear argument about the relation between authority and power, in relation to territorial aspects. Nevertheless, this author also uses the concept of autonomy interchangeably with that of self-determination and community self-government, which obscures her discussion about power distribution. Moreover, since her work is not concerned with establishing links between authority and property with the state of ecosystems, the question of environmental sustainability is not addressed.

Another work concerning authority over forest resources compares the situation of Bolivia, Nicaragua and the Philippines, in which researchers discuss land tenure rights recognition in terms *'legal representative of the rights holders'* (Larson et al. 2015, 228); '*domain of powers and responsibilities'* (p. 228) and the definition of the '*physical space - the land area and resources - to which rights are being recognised'* (p. 229). The authors discuss the creation of authorities and argue that '*when the state recognises, in the tenure reform, a particular entity as the community representative, it is granting that entity external legitimacy'* (p. 229), which, nevertheless, does not necessarily entail internal legitimacy. In line with the findings of Larson (2010), these authors notice how a new authority appears along with the titling process. However, unlike the Nicaraguan case, they consider the one in the Philippines as a success story, which is explained by '*finding the appropriate balance between the new entity with powers over land and natural resources and the traditional institution (…), as well as significant efforts to guarantee transparency and accountability'* (p. 234). These authors conclude that *'legitimate power cannot be chosen, it has to be constructed'* (p. 236); therefore, they recommend addressing authority when recognizing the rights to forest or land for Indigenous peoples. Nevertheless, the question of autonomy is not discussed, even if the autonomy regulations of Nicaragua and Bolivia are mentioned. As well, the authors do not elaborate on how the successful case of territorial authority recognition is related to an appropriate management of natural resources.

Finally, Van de Sandt (2007) discusses the communal land regime for the *resguardo* Jambaló of the Nasa people in Colombia. The author describes the creation and evolution of institutions for resource management in this *resguardo*, emphasizing the problems related to land as the most important natural resource, since other resources such as wildlife or minerals are not available within the boundaries of the *resguardo*. This author identifies processes of individualization of resources in the collectively owned land, which are countered by indigenous authorities. According to this author, the indigenous forms of natural resources management have '*retained their distinctly communal character as a consequence of continuing cabildo*

involvement in the allocation of land (…) and in resolving land disputes - as well as the conservation of ecologically important natural resources' (p. 246). Nevertheless, the tensions between individual and collective production affect values such as solidarity and reciprocity that are crucial for communal endeavours. As well, the author discusses how a conflictive situation such as *coca* cultivation[115] has also led to *'a new manifestation of traditional, communal forms of cooperation'* (p. 248) among *coca* growers.

In addition to discussing authority, this author argues that the autonomy legal framework of Colombia '*provides potentially significant legal resources for the resolution of organisational and other concrete problems'* (p. 253); despite constrains emerging from power asymmetry in the relationship between Indigenous peoples and the State. The work of Van de Sandt (2007) provides a detailed elaboration of the multiple arrangements for the use of natural resources under a common land property regime. As well, it supports scholars' focus on the question of authority. Nevertheless, as her analysis is situated in legal anthropology, there is not much elaboration with regard to the state of ecosystems that can be linked to discussions about environmental sustainability.

The literature reviewed in this section provides key inputs to analyse natural resources management in indigenous autonomous territories; however, the theoretical underpinnings of these works do not seem to be useful to explain how environmental sustainability is addressed in autonomous indigenous territories, mainly because the future dimension of the concept of environmental sustainability lacks of elaboration. Therefore, the following section explores a yet different group of literature, which addresses spatial and environmental concerns in relation to Indigenous peoples.

3.2.6 Environmental planning in indigenous territories[116]

According to Hibbard and Lane (2004), planning '*has a future seeking dimension that means it is concerned with improving the circumstances of human existence, commonly expressed as equality and*

[115] Coca cultivation constitutes almost the only option to obtain income for families with extremely small plots. As an illustration, the author mentions that, in relation to coca and poppy cultivation in the *resguardo, ' the cabildo estimated that the amount of money made from the drug crops was more than twice the value of the resguardo's total coffee harvest in 1999'* (p. 200).

[116] Planning is approached in the sense proposed by Porter (2010), who defines it as '*the social practice of spatial ordering, and more specifically, the modern form of that practice in the West: state-based land use or spatial planning'* (p. 2).

sustainability' (p. 98). Moreover, among the many theoretical approaches to planning[117], its future orientation prevails. Therefore, it can be argued that there is a connection between such interest in the future and the concept of environmental sustainability, which includes the concern for future generations.

The discussions about planning in relation to Indigenous peoples have been developed from a wide range of standpoints, which vary between the '*non-structural incorporation of indigenous views into existing planning systems; to increased consultations with, and participation of, indigenous communities in planning processes; to questioning and deconstructing the deepest assumptions of planning practice'* (Ugarte 2014, 407). In contrast to the works published in English, the literature produced in Spanish hardly uses the concept of 'planning' with a spatial meaning. Furthermore, there is hardly any acknowledgement between each other. Therefore, as the literature in Spanish mainly refers to '*ordenamiento'*[118], this is the concept that was used for the literature review. Following Prusak et al. (2016), there are two approaches within planning literature concerning Indigenous peoples: indigenous planning and planning with Indigenous peoples.

The denomination 'indigenous planning'[119] was coined in the United States context[120] and refers to planning that is done *'from the point of view of people in the community, particularly those who belong to the land in question'* (Friedmann and Kuester 1994, 59). Indigenous planning is discussed as a paradigm that '*aims to reclaim the historic, contemporary, and future-oriented planning approaches of indigenous communities across western settler states*[121]*'* (Prusak et al. 2016, 1), in which planning is made '*by/with (not for) Indigenous peoples'* (Porter et al 2017, 641). According to some scholars (Matunga 2013; Ugarte 2014), indigenous planning existed prior to the arrival of Europeans and should be considered as a new approach within planning research, instead of a new practice. On this regard, Matunga (2013) states that *'planning isn't owned by the west, its theorists, or practitioners. It just happens to be an English language descriptor for a universal function with an abiding and justifiable concern for the future'* (p. 4).

---

[117] For a discussion on this topic see: Innes, Judith and Booher, David. 2015. A turning point for planning theory? Overcoming dividing discourses. *Planning theory* 14(2), 195-213.

[118] Instead of '*planeación'* or '*planificación'*, which would be the first translation for 'planning'. In Portuguese, there is literature referring to '*planejamento ambiental*' which seems to include the spatial dimension. Nevertheless, the only work reviewed here in Portuguese uses a different term. See Comandulli (2016).

[119] Some scholars refer to 'Indigenist planning'. See: Patrick (2017) in Porter et al. (2017), cited in this dissertation. Its translation into Spanish as '*planificación indigenista'* poses a further challenge in terms of the connotations '*indigenismo'* has in Latin America, most of which are very critical regarding the assumptions that it entails. See Leyva Solano (2005, p. 285) for a discussion on this issue. Leyva Solano, Xochitl. 2005. Indigenismo, indianismo and 'ethnic citizenship' in Chiapas. *The Journal of Peasant Studies* 32:3-4: 555-583.

[120] This occurred during a meeting held by a group of students in the early 1990s which '*resulted in the formulation of a theory of action that they named indigenous planning'* (Jojola 2008, 41).

[121] Such as Canada, the United States, New Zealand and Australia. Also called post-settler states.

In Spanish literature, the book edited by Vieco Albarracín et al. (2000) corresponds to indigenous planning, since it discusses indigenous territorial planning[122] in the Amazon region[123]. As part of this book, Vieco Albarracín (2000) argues that there is a contrast between State and indigenous territorial planning in Colombia, where the first is conceived *'in terms of globalisation and internationalisation and based on ecological-economic zoning to define land uses for economic and productive activities'* (p. 221). In contrast, indigenous territorial plans, life plans, respond to aspects such as the autonomous administration of their territories, framed in the *'constitutional recognition of ethnic and cultural diversity'* (p. 223). Similarly, Echeverri Restrepo (2000) highlights how planning made by Indigenous peoples is distinctive, because life plans include '*the laws of the creation of life, the backbone of advice, of education for humanity, in order to refrain from disrespecting others' territories and to stablish organised relationships between men and nature'* (p. 176). Furthermore, the author argues that only Indigenous peoples can plan their territories '*not only because it is the territory they possess and inhabit, but also because is their life spa*ce' (p. 177).

From an indigenous perspective, Día Miraña (2000) presents the experience of ACIYA[124] in the Colombian Amazon and asserts that indigenous territories have been *'planned from the beginning'*[125] (p. 59), but the absence of documents has kept this characteristic unknown for those who are not indigenous. He explains that indigenous territorial planning is based on sacred sites and the respect that people should pay to these sites, in order to protect human beings *'from diseases or other things'* (p. 60). Similarly, Letuama Tanimuka (2000) explains that their planning is based on the understanding of a *Maloca* as the representation of their territories (p. 44). He argues that territorial planning discussions should consider that '*the territory is not just the land, but also Mother Earth and all of us on her* (…) *then, territorial planning is not only about how an ethnic group should be organised, but how thought moves through especial sites* [because] *our ethnic groups go through these places with their thought, their prayers'* (p. 49).

Expanding on the possibilities of indigenous territorial planning, Massieu Trigo (2017) discusses the formulation of the territorial plan of Cuetzalan in Mexico as a tool to *'defend the territory from external menaces'* (p. 139). This author uses the notion of accumulation by dispossession to explain how the plan emerges as the outcome of a social movement, through a bottom-up planning exercise led by the *Masehuales* and *Totonacos* communities. Finally, the author argues that this planning exercise achieved such recognition by external actors, that it

[122] The Spanish term used is '*ordenamiento territorial indígena'*.
[123] The book contains the work of Vieco Albarracín; Echeverri Restrepo; Día Miraña and Letuama Tanimuka cited in this dissertation. Most of the works correspond to the Colombian Amazon.
[124] Indigenous association: Asociación de capitanes indígenas del Yaigojé Apaporis (ACIYA).
[125] '*Ordenado'* in Spanish.

discouraged hydrocarbons exploration activities. Correspondingly, Franky Calvo (2001) argues that Indigenous peoples use territorial planning as a strategy '*since it is interpreted as a mechanism to consolidate their propositions about autonomy and territorial control*' (p. 74). This author advocates for learning from indigenous territorial planning, which could lead to constructing a national life plan that '*allows for dialogue among Colombians without diluting local languages*' (p. 96). In contrast, Cayón Durán (2010) argues that indigenous territorial planning, instead of a transformative practice, corresponds to *'a mean to incorporate Indigenous peoples to the nation by imposing them State's goals'* (p. 201). Through the analysis of the case of ACIYA[126], this author highlights how territorial planning can entail a neo-colonialist perspective and promote essentialisation[127]. Therefore, an indigenous territorial plan, expressed through maps and documents, would entail a *'tacit acceptance'* of the superiority of the State and a subsequent subordination. Nevertheless, this author acknowledges that unless Indigenous peoples engage in planning, '*they have no means to vindicate their rights*' (p. 218).

On another note, scholars of planning with Indigenous peoples are usually concerned with how they have *'long suffered the repressive and dominating effects of planning'* (Hibbard et al. 2008, 148), discussing the role of planning in supporting human rights (Berke et al. 2002); tribal jurisdiction in planning (Zaferatos 1998; Hibbard and Lane 2004), indigenous urban planning (Porter 2013); as well as the unveiling of colonial processes within the planning discipline (Porter 2010; Ugarte 2014). Concerning environmental planning, the poor outcomes of the *'so-called "rational-comprehensive" model of planning'* (Hibbard et al. (2008, 142) have been tackled by works such as that of Berke et al. (2002), which discusses the implementation of the resource management act of 1991 in New Zealand and is quoted as a pioneer in post-settler states. These authors argue that indigenous rights advancement requires planners to focus on *'local planning, participation of indigenous people, and tribal organisational capability-building efforts'* (p. 132).

Some scholars discuss how to make planning processes more cooperative (Webster 2016) [128] or collaborative ss a way to solve planning problems. They call for the empowerment of Indigenous peoples through *'greater control over relevant planning processes and the utilisation of indigenous knowledge in planning and management'* (Hibbard et al. 2008, 143). Moreover, these authors advocate for the engagement in '*community-based and collaborative approaches to environmental*

[126] See Día Miraña (2000), cited in this dissertation.
[127] The author considers that ACIYA's territorial plan '*does not propose radically different measures regarding to the management of the world and the traditional practices (…). Indigenous peoples present an essentialist image of themselves, since they show themselves in balance with nature, without acknowledging the animal and plant population decrease in some areas where the population concentration in large villages has produced competition and conflicts about access to resources*' (p. 207).
[128] Zaferatos (1998) refers to 'Cooperative land use model' and 'cooperative planning approach'.

planning' (p. 147)[129]. Similarly, Booth and Muir (2011), argue that '*new, culturally derived and culturally appropriate planning models would better meet the needs of First Nations'* (p. 422), even if derived from non-indigenous perspectives.

These approaches are questioned by scholars who consider that fostering participation is not enough to '*ensure fairness and democracy in planning'* (Lane 2003, 368). Moreover, such emphasis on Indigenous peoples' participation may simply turn them into another group of stakeholders (Porter 2013). Similarly, Howitt and Suchet-Pearson (2006) identify how '*concepts and practices of separation, superiority, intervention, control and management are often reimposed through a range of co-management, joint management and community-based management programmes'* (p. 325). Porter (2010) argues that the planning practice itself should be questioned and shows how environmental planning is built over the assumption of *'a linear connection between the observable elements of nature and our actions upon those elements'* (p. 96) which are at the core of management approaches, even if collaborative. This author highlights, as well, how non-indigenous planning ontology is built over the separation between nature and culture, which creates the potential to decide through planning what should be considered as natural or cultural and how this potential '*both constrains and produces possibilities for Indigenous presence and power'* (p. 105).

In contrast to literature produced in English covering a wide range of standpoints, literature in Spanish discusses environmental planning and Indigenous peoples mainly relation to land-use planning and management of protected areas. Only one work about environmental planning in indigenous territories, not related to protected areas, was found in this review. On the one hand, the work of Arteaga Aguilar et al. (2014) discusses community land management[130] in peasant communities and *ejidos,* which corresponds to an especial kind of ecological land management, as denominated in the Mexican context[131]. The authors conclude that community land management strengthens communal institutions and promotes sustainable development, through the involvement of local users in planning and the operation of *'local development and conservation strategies'* (p. 305). Nevertheless, these authors provide little information on which benchmarks are used to evaluate the outcomes of the planning process.

For the Brazilian context, Comandulli (2016) discusses territorial and environmental management of indigenous lands[132], where management plans were formulated *'by indigenous*

---

[129] Regarding the roots of community-based approaches, Porter (2010) indicates that they emerge from the influence of '*theories of deliberative democracy and communicative ethics'* (p. 125) in the field of planning.
[130] Translation of '*Ordenamiento territorial comunitario'* proposed by the authors.
[131] In Spanish: *Ordenamiento ecológico territorial* (OET). The translation was proposed by the authors.
[132] The author's translation of '*gestão territorial e ambiental de terras indígenas'*.

communities in partnership with NGOs' (p. 49). According to the author, the national policy for indigenous lands' territorial and environmental Management[133] fostered the formulation of these plans[134]. However, some peoples opted for formulating life plans[135] instead. This author discusses the limitations of these plans in relation to '*their language, the lack of certainty about the way to deal with each people's representative processes and the obstacles to full access to land and natural resources'* (p. 61). Therefore, she considers that most of indigenous associations are not ready to lead the process on their own, which means that the planning processes are highly dependent on external actors.

With regard to protected areas, several case studies were found. Berman Arévalo and Ros-Tonen (2009), discuss the failed process of creation of a protected area in the Selva de Matavén in Colombia. These authors analyse the discourses and strategies deployed by actors involved in forests conservation in that area, in relation to the notion of 'territorial ordering'. They discuss the partnering of Indigenous peoples with multiple actors, whose discourses ended up being 'amalgamated' under the concept of territorial planning involving '*notions of cultural strengthening, self-government, territorial protection, sustainable development, natural resource management and administrative articulation with local and regional governments'* (p. 745). Nevertheless, such amalgamation is based on the sum of actors' use the concept, rather than in an agreement about its meaning.

Márquez Guerra (2016) discusses a case in Bolivia where the processes of zoning and regulation to create a protected area were led by conservationist NGOs. According to this author, the planning process was *'sometimes superposed over indigenous autonomy and self-government'* (p. 101). Moreover, this author affirms that the zoning and fixing of communities' locations, that is, juridical formalization, rendered the population '*controllable for the State, donors and for conservation'* (p. 104). Under this frame, indigenous ways of relating with space, non-humans and other cultures end up being controlled, while those behaviours that do not correspond to conservation may be typified as a '*loss of their ancestral values'* (p. 105). In contrast, Cayón Durán and Turbay Ceballos (2005) discuss the collaborative management of a national park in the Colombian Amazon and indigenous territorial plans as mechanisms that '*Indigenous peoples use*

---

[133] Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas (PNGATI).
[134] According to Margarido Pessoa (2010), the juridical frame for land-use planning in Brazil is found in article 21 of the Brazilian constitution (1988) but has not been further developed. Therefore, the ethnozoning has been used as a planning instrument (p. 77) and was used as a precedent for the Management Plans. See: Margarido Pessoa, Marina. 2010. O *Etnozoneamento em Terras Indígenas do Acre como ferramenta de Gestão Territorial*. Universidade de Brasília.
[135] Originally '*Plano de Vida'*.

to socially and symbolically appropriate external resources and discourses' (p. 116). These authors highlight how '*the term territory is part of the new political language of indigenous organisations'* (p. 117), which is used and understood as a set of vital and social relationships expressed in landscape, instead of a merely geographical meaning. Therefore, they question whether collaborative management responds to an exchange of knowledge or corresponds to an opportunistic alliance whose implications are unknown.

Finally, Valderrama González (2016) discusses territorial development[136] and governance in the area of the *Sierra nevada de santa marta* in Colombia, where there is an overlapping of multiple concepts of territories: subnational units (three departments, 16 municipalities), three *resguardos*, two national parks, one archaeological park and one forest reserve. According to this author, in such context of multiple actors at multiple levels who frequently oppose indigenous worldviews, Indigenous peoples' strategy focuses in *'securing compliance of agreements reached with the national government under the frame of their territorial autonomy'* (p. 263). Moreover, they have been able to foster the conceptualisation of territory as a victim who is subject of reparation[137]. Thus, the author shows how Indigenous peoples' involvement in territorial planning processes goes beyond participation, in order to advance their agenda of territorial autonomy and distinctive worldview recognition.

This review shows a parallel development of theoretical approaches between the literature produced in English and Spanish languages, even though they hardly make any reference about one another. Both streams of literature discuss how territorial planning for indigenous territories ought to consider the specific features related to Indigenous peoples. However, the conceptual link between indigenous environmental planning and environmental sustainability is undertheorized. Moreover, a handful of works addressing the intersection between environmental sustainability and indigenous territorial autonomy. These works are reviewed in the following section.

[136] Author's translation of '*ordenamiento territorial*' (p. 432)
[137] See: Ulloa Cubillos (2017). Cited in this dissertation.

3.3 Research questions

The general question that guides this research aims at understanding whether the institutions developed under a frame of indigenous territorial autonomy contribute to environmental sustainability. Rather than disputing the recognition of autonomy rights, this research is interested in the traits of indigenous institutions concerning the creation of prescriptions, rules and plans, through which environmental sustainability is expected to be achieved. Thus, the general question asks

Do autonomous indigenous institutions contribute to environmental sustainability in indigenous territories and why?

This general question aims at understanding the traits of autonomous institutions in indigenous territories, rather than disputing their suitability. The answer for this question requires of studying the characteristics of indigenous territories and their boundaries (Kent 2008), as well as the identification of relevant actors and institutions in terms of their scope and interactions (Ostrom 1990; Van de Sandt; Cox et al. 2010). It requires as a thorough understanding of indigenous authority exercise, decision-making and implementation (Zaferatos 1998; Larson and Lewis-Mendoza 2012; Matunga 2013) and clarification about the meaning of environmental sustainability for relevant actors (Jojola 2013; Escobar 2015; Rodríguez 2016). Considering that the concept of environmental sustainability expresses more of an aim than a particular state, this question seeks to discuss if Indigenous peoples address this aim, how they do it and the reasons their interest or disregard for environmental sustainability. These aspects are addressed through their clustering in three specific research questions, which are understood as cumulative steps in the process of answering the general question:

1. How do indigenous institutions mediate the relation between humans and the territory?

This question is focused in the understanding of the processes through which indigenous institutions are crafted concerning ecosystems and their components within the boundaries of the territory. The answer to this question will contribute to recognise prescriptions, rules,

norms and strategies (Crawford and Ostrom 2005), structures, actors and institutional changes, which are necessary to identify the relationships between prescriptions and outcomes in the system (Ostrom 1990; Quinn et al. 2007; Baggio et al. 2016). Furthermore, this question entails an understanding of institutional change, considering that current arrangements *'are affected by the past decisions made by external authorities or local appropriators or both'* (Ostrom 1990, 201). Once indigenous institutional traits are clear, it is necessary to understand how these institutions interact with external settings concerning environmental planning. Therefore, the second specific research question asks:

2. How are indigenous territories planned in Colombia?

This question aims at identifying the relevant practices and actors of territorial planning for indigenous territories, focusing on ecosystems and their components. Therefore, the information required to answer this question includes the role of indigenous institutions for environmental planning, as well as their interactions with non-indigenous plans, actors and processes. It is acknowledged here that, in addition to formal processes, the activity of planning is done through *'the local everyday ways by which values about place are negotiated and decided'* (Porter and Barry 2015, 176), for which even the most detailed collection of information would fall short to cover this ever-producing processes. Therefore, the contents of environmental plans pertaining indigenous territories will be used to operationalise this question. As well, institutional development for planning is addressed here as a socio-historical process '*informed by the indigenous worldview'* (Jojola 2013, 465). Nevertheless, since '*indigenous experience with planning is dependent, to a significant degree, on the character and actions of the planning apparatus of the nation state'* (Lane 2006, 387), the answer to this question requires also of the understanding about the differences between indigenous and non-indigenous planning. Thus, attention must be payed to differences among actors concerning the concept of environmental sustainability. This contrast between indigenous and non-indigenous actors provides basic inputs to understand the features of indigenous territorial autonomy exercised, which is analysed in-depth through the third specific research question:

3. How is territorial autonomy exercised by Indigenous peoples concerning ecosystems and their components?

This question responds departs from the acknowledgement of the existence of an implementation gap in indigenous territorial autonomy in Colombia (Rodríguez 2008; Aylwin 2014b), whose expression concerning nature is not well known. Then, there must be an identification of the key components of indigenous territorial autonomy and the constraining factors for its exercise, some of which are expected to be related to the question of authority (Larson, 2010). With this information, it would be possible to evaluate the characteristics of indigenous territories and institutions in relation to the concept of territorial autonomy.

The first specific research question focuses in the internal conditions of indigenous territories and their institutions, while the second covers their interaction with external actors and non-indigenous practices. Finally, the third specific research question builds on the inputs delivered by its predecessors and allows for the production of a situated analytical model for indigenous territorial autonomy. The answers for these questions constitute the basis over which the general question can be answered.

4 THEORETICAL FRAMEWORK

According to Cox et al. (2016), the study of *'human-environment interactions remains dispersed across a wide range of fields, each with their own set of theories'* (p. 45). Accordingly, the literature review presents several theoretical approaches to the study of environmental sustainability and indigenous territorial autonomy, some of which appear to have convergences while others seem to be mutually exclusive. In order to discern which theoretical approaches could be more relevant for this research, the work of Cox et al. (2016) was used to select among theories available to study human-environment interactions. According to these authors, scientific fields are interrelated through networks that can be clustered according to their affinity, which creates '*theoretical hubs'* (p. 50). These authors identify two main clusters associated with the fields of Commons and Political economy, among which '*the theory of Community based natural resources management CBNRM connects these two clusters*' (p. 51). Using the classification proposed by these authors and the outcomes of the literature review, the selection of the theoretical bases for this dissertation focused on the cluster of commons.

According to Cox et al. (2016), the theoretical approaches in the field of the commons are characterised by nested relationships that create '*three highly connected hubs'* (p. 51): community-based natural resource management (CBNRM), collective action and the commons and institutional design principles, called CBNRM design principles by these authors. However, CBNRM, as discussed in the literature review, is based on the assumption that the local level is intrinsically better to manage natural resources, which would constitute a fundamental constraint for the scope of this research and the interpretation of results. Therefore, CBNRM is not used here. Regarding the other two hubs, Cox et al. (2016) suggest that Collective action and the commons are nested in the institutional design principles. The latter is considered as a 'list-oriented' theory, which combines '*combine a set of simple theories into a list which generally predict success on the basis of adherence to that list'* (p. 54). Thus, an institutional approach is taken in this dissertation through the use of the institutional design principles to underpin this research.

Nevertheless, the literature review suggests that the institutional design principles may not be enough to fully grasp the context under which natural resources are managed, a territorial autonomy regime, and the main actors to be considered for this research, Indigenous peoples. Therefore, the theory of institutional design principles is used together with two set of tools. The first one corresponds to the social-ecological systems framework (SESF) proposed by

Ostrom (2007). Which '*provides the basic vocabulary of concepts and terms that may be used to construct the kinds of causal explanations expected of a theory'* (McGinnis and Ostrom 2014, 1). This framework is used considering that Anderies et al. (2004) suggest that a framework would support the use of the institutional design principles for understanding the robustness in social-ecological systems. Currently, there are several frameworks available for analysing social-ecological systems (SES), which have been criticised because they '*cannot in and of themselves provide explanations for, or predictions of, behaviour and outcomes'* (Thiel et al. 2015, 153). However, they contribute to *'set a common language and to structure research on SES'* (Binder et al. 2013, 1). The work of Binder et al. (2013) was used to choose the SESF among available frameworks[138], because it is the only one that '*treats the social and ecological systems in almost equal depth; and provides a frame for developing different degrees of specificity in differentiating (…) tiers'* (Binder et al. 2013, 16).

The second one corresponds to inputs from indigenous planning found in the work of Matunga (2013) and Jojola (2013), which provide conceptual and theoretical keys to avoid the pitfalls identified by researchers concerning ontological differences (Howitt and Suchet-Pearson 2006; Escobar 2016) with regard to Indigenous peoples. The following sections explain the essentials of institutional design principles, the features of the SESF and the inputs taken from indigenous planning literature and how these elements are used to answer the specific research questions formulated for this dissertation.

4.1 Institutional design principles

This theory is based on the work of Ostrom (1990), who identified eight general design principles that characterise '*robust CPR institutions'* (p. 90). The identification of these principles emerged from the analysis of multiple institutions, which *'varied from small, self-contained systems of homogeneous resource users to complex systems organized in modern economies'* (Anderies et al. 2004). A design principle is defined as an *'essential element or condition that helps to account for the success of (…) institutions in sustaining the CPRs and gaining the compliance of generation after generation of appropriators to the rules in use'* (Ostrom 1990, 90). After their initial formulation, they were later reviewed by Cox et al. (2010), who proposed some modifications to the original version which can be observed in Table 1.

[138] Driver, Pressure, State, Impact, Response (DPSIR); Ecosystem Services (ES); Earth Systems Analysis (ESA); Human-Environment System (HES); Material and Energy Flow Analysis (MEFA/MFA); Management and Transition (MTF); The SES (SESF); Sustainable Livelihood Approach (SLA); The Natural Step (TNS); Turner et al. Vulnerability (TVUL) (Binder et al. 2013, 4).

Table 1. Institutional design principles.

Ostrom's design principles	Modification by Cox et.al. (2010)
1. Clearly defined boundaries.	1.a User boundaries.
Individuals or households who have rights to withdraw resource units from the common pool resource (CPR) must be dearly defined, as must the boundaries of the CPR itself.	Clear boundaries between legitimate users and nonusers must be clearly defined.
	1.b Resource boundaries.
	Clear boundaries are present that define a resource system and separate it from the larger biophysical environment.
2. Congruence between appropriation and provision rules and local conditions.	2.a Congruence with local conditions.
3. Appropriation rules restricting rime, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labour, material and/or money.	Appropriation and provision rules are congruent with local social and environmental conditions.
	2.b Appropriation and provision.
	The benefits obtained by users from a CPR, as determined by appropriation rules, are proportional to the amount of inputs required in the form of labour, material, or money, as determined by provision rules.
4. Monitoring.	4a. Monitoring users.
Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators.	Monitors who are accountable (to the users) monitor the appropriation and provision levels of the users.
	4b. Monitoring the resource.
	Monitors who are accountable (to the users) monitor the condition of the resource.

Source: author's own compilation based on Ostrom (1990) and Cox et al. (2010).

Since the initial formulation of institutional design principles, many studies have been conducted. Cox et al. (2010) reviewed how researchers used the design principles in 91 studies, concluding that, despite different ways of applying the principles and critics raised towards their conceptualisation and use, '*they are a sound basis for future research conducted to further disentangle the interactive effects of relevant variables'* (p. 16). However, the analysis of design principles is not uniform in the literature.

Morrow and Whatts (1996) for example, present an analysis of the conditions of each design principle and then justify why the principle is met or not. As well, they indicate that some principles are not applicable or that there is not sufficient data for assessment. Moreover, they expand principles one, two, seven and eight. On another note, Baggio et al. (2016) discuss which of the design principles or clusters of principles are necessary for success, while the work of Toto (2018) is concerned with applying the design principles to a river basin in

Albania. More recently, McLain et al. (2018) draw on the work of Cox et al. (2010) to analyse 31 cases concerning property regimes in fisheries. Quinn et al. (2007), qualify principles and CPR management regimes as strong, weak or absent. They propose to consider that the regime is strong if all principles are strong. A weak regime is one where '*between one and three principles were weak or absent'* (p. 104) and an absent regime is that in which more than three principles qualify as weak or absent. More recently, Ratajczyk et al. (2016) assess design principles through a coding protocol which also leads to a binary qualification, present or absent. They build on the work of Cox et al. (2010), which was made under the frame of the 'social-ecological systems meta-analysis database' project or SESMAD, where the coding of design principles involved inferring '*that conditions satisfying each principle were present in a case'* (p. 4).

According to Ostrom (1999), systems '*characterized by only a small number of these design principles are more likely to fail than those characterized by a larger number of them'* (p. 6). More recently, Baggio et al. (2016) suggest that more design principles in a system *'increase the likelihood that the system is successful. Nonetheless, DPs may require further unpacking because many are actually combinations of multiple factors themselves'* (p. 435). However, different approaches persist in the use of the design principles. Cox et al. (2016), for example, indicate that the common approach to list theories such as the institutional design principles '*is to effectively treat them as sets of simple theories, which are then tested individually'* (p. 54); however, Baggio et al. (2016) argue that the principles '*should not be viewed in isolation'* (p. 435). Table 2 contains a summary of the way in which institutional design principles have been operationalised.

The explanatory power of the design principles for the persistence of the resource systems and their institutions depends on showing how these principles contribute to have appropriators *'willing to commit themselves to conform to operational rules devised in such systems, to monitor each other's conformance, and to replicate the CPR institutions across generational boundaries'* (Ostrom 1990, 91). According to Schlager (2016); available research on the institutional design principles '*confirms the critical roles that the design principles play in supporting the emergence of effective governance'* (p. 414). Nevertheless, there is not yet enough knowledge about how many principles are necessary to guarantee success. Critics of this approach point to the lack of critical social variables, asking this approach to depart *'from viewing actors as rational decision makers, and communities of users as coherent wholes without internal conflict or heterogeneity'* (Cox et al. 2010, 13)[139]. Other critics focus in

[139] Furthermore, it has been argued that 'on closer examination the number of conditions turns out to be larger' (Agrawal 2002, 49), which could reach to a list of 'a total of 33 factors, and there is some reason to believe that this a relatively comprehensive list of factors that potentially affect common pool resource management' (p. 65).

the use of these principles as a Panacea (Baggio et al. 2016) and the lack of comparative analyses that support the principles (Schlager 2016).

Table 2. Use of design principles in the literature.

Author	Design principles	Assessment	Coding definition	Further development
McLain et al. (2018)	Cox et al. (2010)	None.	Not included.	Three mechanisms: perceptions of legitimacy (1a, 1b, 2a, 3); of likelihood of benefitting (4, 5) and of capacity to enforce (2b).
Ratajczyk et al. (2016)	Cox et al. (2010)	Present; absent.	Inclusion and exclusion criteria to determine whether the principle is present. Possible answers for each principle are: Yes; No; Missing in case or not applicable. Some principles have more detailed questions regarding the flexibility and perceived fairness of rules-in-use [140].	None
Cox et al. (2010)	Cox et al. (2010)	Present; absent.	Evidence of the existence of satisfying conditions: *If there was evidence of satisfying conditions, we coded a one for that case. If there was positive evidence against such conditions, we coded a zero. If no reference was made to the principle, or if we considered the description overly ambiguous, we left the field blank for that principle and considered it a missing datum'* (p. 4).	Reformulation of design principles 1, 2 and 4.
Quinn et al. (2007)	Ostrom (1990)	Strong; weak; absent.	Not included for each design principle. Inluded for the management regime: '*where all the design principles were strong then management was considered strong. If between one and three principles were weak or absent then management was weak. When more than three principles*	None.

[140] See: Supplementary material. Challenges and opportunities in coding the Commons: problems, procedures, and potential solutions in large-N comparative case studies. https://osf.io/7qpx3/?show=view

			were weak or absent then management was considered absent' (p. 104).	
Morrow and Whatts (1996)	Ostrom (1990)	Met; unmet; Not applicable; insufficient data.	Not included.	Expansion of desing principles 1, 2, 7, 8.

Source: author's own compilation

Finally, considering the trajectory of research concerning the institutional design principles, the updated version proposed by Cox et al. (2010) is used in this dissertation. Concerning the assessment of the design principles, the approach of this dissertation is close to the work of Morrow and Whatts (1996). Consequently, each principle will be described in detail in order to discuss its presence in the system under analysis.

4.2 The social-ecological systems framework

This framework is used as a tool for discussing the institutional design principles. The use of this framework is based on the understanding of social-ecological systems as *'composed of multiple subsystems and internal variables within these subsystems at multiple levels*' (Ostrom 2009, 419), where the variables correspond to different tiers according to the scale of analysis. Nevertheless, using the framework does not require of addressing all variables. The system is conceptualised as composed by first-tier variables: actors, resource units, resource systems and governance systems, which can contain second-tier variables. The first-tier variables are involved in focal action situations, where interactions and outcomes are produced.

The social-ecological systems framework (SESF) has been criticised because it '*does not capture interdependencies in complex commons where multiple types of actors carry out multiple activities that depend on and affect multiple RU and RS'* (Hinkel et al. 2015, 9). Furthermore, they argue that the framework fails to grasp the dynamic traits of actor's activities and resource units' stocks. Even the creator of this framework recognised that: *'a complete representation of dynamic linkages among concurrent action situations operating in complex SESs remains a distant goal'* (McGinnis and Ostrom 2014, 11). Nevertheless, none of the critics suggests the futility of the framework. Moreover, some authors suggest the SESF *'offers some of the most path-breaking innovations in structuring interdisciplinary, policy-relevant research on SES'* (Thiel et al. 2015, 162).

Therefore, the social-ecological systems framework is used here as a guide to select the variables that will feed the analysis of the institutional design principles. As well, some of the variables of the framework are used for description of the system under analysis (See chapter 6). Finally, the framework will contribute to organise the process of data collection, which is discussed in detail in the chapter 5.

4.3 Indigenous planning principles

There is no unified theory that can be called indigenous planning; however, scholars in this field have put forward some tenets that characterise this sort of planning. According to Matunga (2013), '*indigenous planning is in one sense a process, approach or indeed activity that links specific indigenous communities to defined ancestral places, environments and resources'* (p. 14). It is based on the intergenerational application of *'the values and practices that are necessary to sustain the worldview, connecting past practice with a dynamic present, all in the context of planning for the future*' (p. 3). According to Matunga (2013), indigenous planning runs parallel to mainstream planning. Moreover, it should be understood as a *'tradition of resistance and commitment to political change'* (Prusak et al. 2016, 3), characterised by the elements listed in Table 3.

Table 3. Key aspects for the analysis of indigenous planning.

Focus	Indigenous peoples and their environments (lands, resources, etc.).
Goals	Indigenous peoples' autonomy over themselves and their environments.
Objectives	Improved environmental quality, advocacy, social cohesion and well-being, economic growth and redistribution, cultural protection and enhancement.
Knowledge	Indigenous theories and knowledge, including traditional ecological knowledge, knowledge produced by indigenous epistemologies, as well as coproduced and adapted knowledge.
Planning framework	Iterative processes using indigenous planning tools (management plans), procedures (meetings), practices (policy analysis, resource management).

Source: adapted from Matunga (2013).

In line with indigenous planning scholars, the approach of this dissertation includes the recognition of the distinctiveness of indigenous planning. The work of Prusak et al. (2016) is used here as a guide to apply these principles. According to these authors, three themes emerge from the analysis of a case concerning first nations in Saskatchewan, Canada, through which

they assess whether the case corresponds to indigenous planning. These themes are '*building indigenous futures with a "mandate from the people", the importance of indigenous authority and leadership and institutional development for indigenous planning*' (p. 5). These authors consider that the case under analysis does not fit the indigenous planning paradigm '*put forth by Jojola and Matunga*' (p. 9), based on the location of authority and control over the process. However, they argue that, even if they do not fully coincide with the paradigm, planning processes may create conditions to move towards indigenous planning, based on the acknowledgement of the principles. Therefore, the incorporation of indigenous planning into the analysis will be made through the three tenets proposed by Jojola (2013), which are not hierarchical and should be present in a case in order to be considered as one of indigenous planning.

One of these tenets is that '*process must be informed by indigenous worldview*' (p. 465), which refers to the ability of Indigenous peoples to '*use elements of their philosophies and operationalise them in a manner that affirms their holistic practices*' (p. 465). Another tenet is that '*indigenous voices need no translation*' (p. 466), which according to Jojola (2013) means that cultural lessons '*are predicated upon experiential learning, social engagement and adherence to traditional customs*' (p. 466), therefore, indigenous planning should not be based on imposed practices but on indigenous experiences, which do not require translation. Finally, the other tenet of indigenous planning is that '*the essence of indigenous scholarship is native self*' (p. 467), which calls for acknowledging that indigenous individuals are not empty vessels and that they '*carry the weight of their own education as lived through experience*' (p. 467).

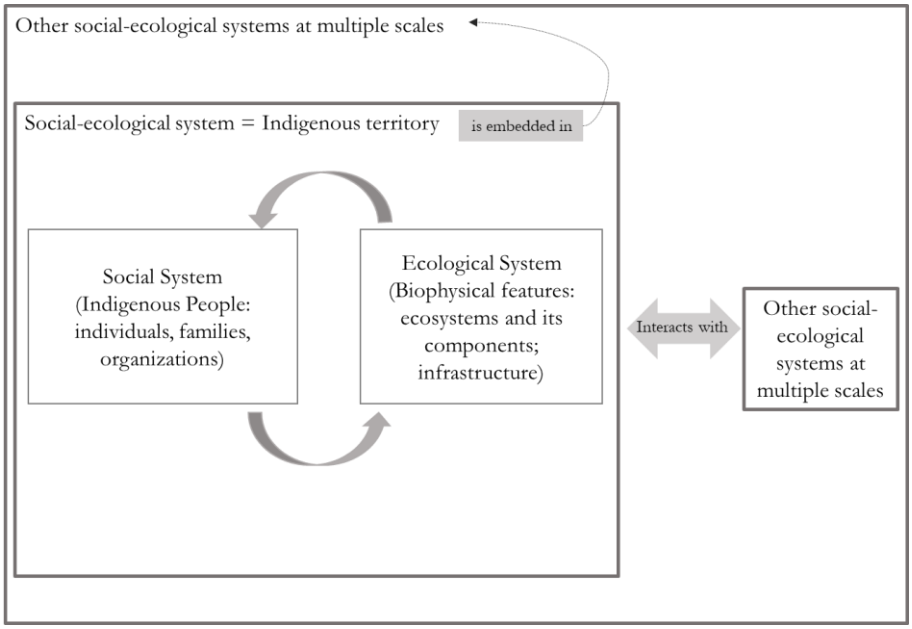
These tenets will be used to identify their core concepts, indigenous worldview, indigenous practices and experiences, indigenous scholarship, within the information collected for this research. This would allow to discern the extent to which there is indigenous planning in indigenous territories; however, the main purpose of identifying the presence of these tenets in this dissertation will be to enrich the theoretical analysis based on the institutional design principles.

4.4 Dissertation's approach

This research uses the institutional design principles to analyse indigenous territories, which include the people who dwell in them and the ecosystems found within the boundaries of these territories. Therefore, these are understood here as social-ecological systems. The ecosystems are understood as formed by resource units or components. Therefore, any

reference to the biophysical components of the social-ecological system can be considered as a synonym of ecosystems or its components, depending on the level of analysis. Similarly, the social dimension of the system can be analysed in multiple levels: individuals, families, organisations or people. The interaction between the social and biophysical components of the system goes in both directions and may produce emergent properties for the system, which were not present in its subsystems. Figure 3 contains a simplified visual representation of the system, its components and interactions.

Figure 3. Visual representation of indigenous territories as social-ecological systems.



Source: author's own compilation. Indigenous territories are conceptualised as social-ecological systems. These are compounded by social systems and ecological systems, which interact with each other. Both types of components or subsystems and their interactions constitute a social-ecological system, which interacts with other social ecological systems and is embedded in larger social-ecological systems.

The approach taken in this dissertation differs from most of the scholarly work on the design principles, which is mainly focused in resource systems, namely forests, fisheries or grasslands. These studies tend to define the boundaries of the system in relation to the extraction of resource units. For example, the work of Morrow and Watts (1996) is concerned with discussing access to and decision-making over timber forest products by an Indigenous people in Peru. Even though they discuss the question of land titling in defining the boundaries of the forests, the authors are not concerned with game, for example, which is also found in those forests. Quinn et al. (2007) acknowledge in their study about villages in Tanzania that none of

them '*had fewer than three resources that were considered to be, or managed as, CPRs. All villages considered pasture and forests to be CPRs and managed them, to a greater or lesser degree, as such'* (p. 104), which exemplifies how the focus over one resource system may overlook the complexity of the case. Therefore, the approach adopted in this dissertation is closer to the one taken by Ghate (2000), who discusses indigenous forest management in India and traditional sustainable practices fostered by indigenous institutions.

Concerning the assessment of the design principles, the work of authors who have addressed large-N comparative case studies (Cox et al. 2010; Ratajczyk et al. 2016; McLain et al. 2018) shows that even with a very detailed set of coding rules (Ratajczyk et al. 2016); the criteria to determine whether a principle is present or not can vary greatly between coders. Therefore, the approach taken in this dissertation is alike to that followed by authors who make a detailed description of the case (Ostrom 1990; Morrow and Whatts 1996; Ghate 2000) in order to provide arguments about the presence or absence of the design principle.

The use of the institutional design principles is enriched by analytical tools produced in the literature of indigenous planning. These are incorporated here in order to gain a more comprehensive understanding of indigenous perspectives, as well as the future dimension inherent to planning in order to make a more robust analysis of environmental sustainability. Thus, the three tenets of indigenous planning proposed by Jojola (2013) are used as an input for the analysis of information. Figure 4 visually explains the theoretical approach used for the dissertation.

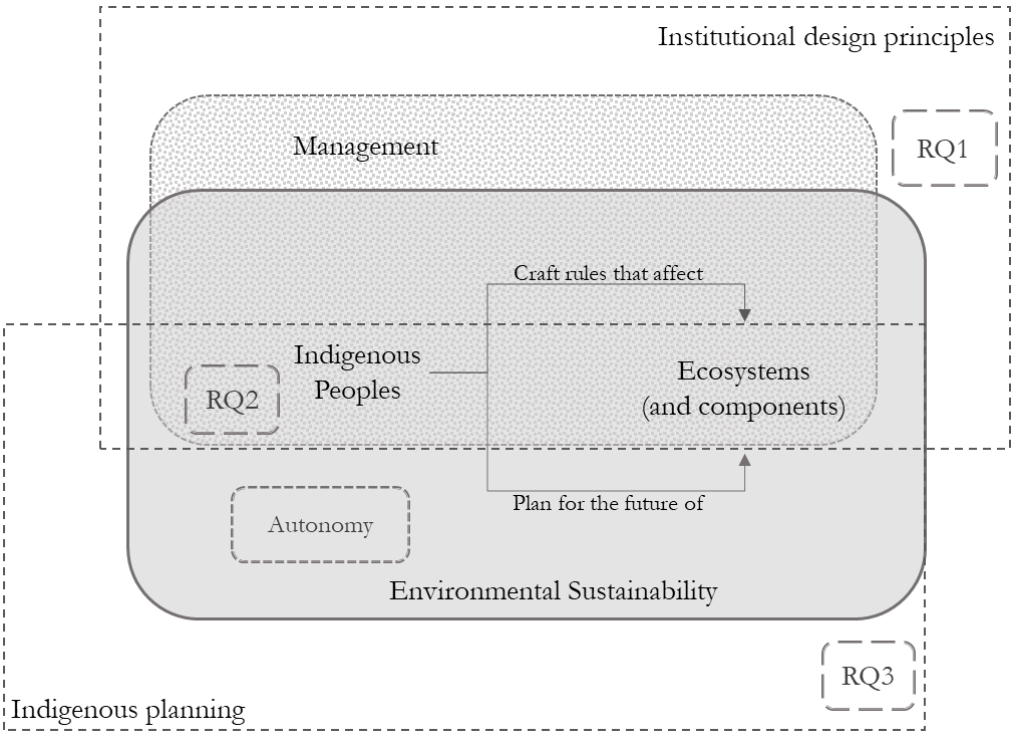
The implementation of this approach relies on key concepts that contribute to bridge the theoretical inputs of institutional design principles and indigenous planning. The first corresponds to the concept of 'territorialisation', based on the definition proposed by Oliveira (1998) as

'a process of social reorganisation that implies 1) the creation of a new social cultural unit through stablishing a distinct ethnic identity; 2) the constitution of specialized political mechanisms; 3) the redefining of social control of environmental resources and 4) the re-elaboration of culture and the relationship to the past' (p. 54).

The concept of territorialisation is deemed as useful because it allows for considering the transformation that indigenous territories have gone through, discussed in chapter 2, and echoes the call of scholars of political ecology to consider the conditions through which indigenous territories are bounded. About the concept of territorialisation, Rasmussen and Lund (2018) further highlight that the drawing of boundaries contributes to distinguish

internal from external control. Therefore, the focus is placed on those indigenous territories that have gone through processes of territorialisation by means of land demarcation. Indigenous territories are usually larger than demarcated lands. Nevertheless, ethnic groups are inserted in a context of *'interaction that is processed within a specific political frame, whose parameters are established by the State-Nation'* (Oliveira 1998, 55). Therefore, the concept of territorialisation concentrates in bounded indigenous territories for the sake of facilitating the analysis and, at the same time, allows to discuss indigenous territories as processes rather than fixed entities, which have been created in a particular socio-historical context.

Figure 4. Theoretical approach used in this research.



Source: author's own compilation. The first research question covers the management of ecosystems and their components from the past to the present and is approached through the institutional design principles. The second research question focuses in environmental planning in indigenous territories made by indigenous and non-indigenous actors, with regard to the future dimension involved in environmental sustainability. It is approached through the institutional design principles and indigenous planning. The third research question is approached through indigenous planning concerning autonomy and environmental sustainability.

Concerning the concept of environmental sustainability, the definition proposed by Lélé (1991) of ecological sustainability is used here, which is rephrased as environmental sustainability, as '*the existence of the ecological conditions necessary to support human life at a specified level of well-being through future generations*' (p. 609). Ecological conditions are understood here as

equivalent to biophysical conditions, those are, the traits of nature in a given place. Ecological conditions and ecosystem conditions are used as synonyms. As well, those ecological conditions depend on the type of ecosystems under discussion, which means that discussing environmental sustainability requires of the acknowledgement of specific ecosystem features. On the other hand, human groups may have different understandings of well-being according to their social and cultural traits, which also implies that the characteristics of environmental sustainability can be different for humans dwelling in the same type of ecosystem. Finally, when the definition refers to future generations, it should be noted that is not possible to establish a metric that fits all contexts.

Environmental sustainability is a concept that guides humans for deciding and acting over ecosystems, which correspond to the main objective of the discipline of environmental planning. The latter is understood here as the practice that '*seeks to ensure ecological considerations are included in planning and management of human activities.* [Which is] *usually advisory and anticipatorily, process-oriented'* (Slocombe 1993, 299). Leaving aside extraordinary disturbances such as those produced by human-related accidents (explosions, spills, etc.) or abrupt natural events (volcanic eruptions, earthquakes, etc.), the assumption that sustains environmental planning is that the impact of humans over ecosystems is a major issue of their continuation in time, which can be influenced by human institutions. Therefore, when environmental sustainability is discussed for indigenous territories, the focus is placed on indigenous institutions that guide, regulate, decide and plan over the ecosystems in their territories.

Institutions are understood as '*the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales'* (Ostrom 2005, 3), where the purpose of institutions is to influence actors' behaviours in a certain direction. Institutions are used to determine '*who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions'* (Ostrom 1990, 51). Thus, indigenous institutions correspond to those prescriptions crafted and sustained by Indigenous peoples.

However, Crawford and Ostrom (2005) argue that there are three types of institutional statements that should be distinguished when discussing actor's behaviour: rules, norms and strategies. These authors develop a syntax grammar known as ADICO: attributes, deontic, aim, conditions, or else, indicating that only rules include the element '*or else'* (p. 149). Therefore, only rules are expressed in such a way that there are consequences for non-

compliance. Moreover, Ostrom (1990) states that if an aspect is not required or forbidden it means that it is permitted, therefore, '*the absence of a rule forbidding or requiring an action is logically equivalent to the presence of a rule that permits an action'* (p. 140). According to the aforementioned syntax grammar, the verbs that characterise these operators are '*"may" (permitted), "must" (obliged), and "must not" (forbidden*)' (Crawford and Ostrom 2005, 140). Although, the use of 'should' statements is also possible (Crawford and Ostrom 2005). Accordingly, the notion of deontic operators or '*what is forbidden, obligated, or permitted'* (Ostrom 2005, 126) is used in this research to promote aim at gaining a deeper understanding of indigenous institutions.

Another key concept for the use of the institutional design principles is the notion of nesting of rules, which implies that 'w*hat can be done at a higher level will depend on the capabilities and limits of the rules at that level and at a deeper level'* (p. 58). Following Kiser and Ostrom (1982), the '*attributes of individual decision maker constitute the core of the analysis'* (p. 58), which corresponds to a methodological individualist perspective. This acknowledgement does not imply that the collective perspective is neglected. However, it does clarify the scope of the theoretical approach and makes explicit the assumptions in which this approach is based. Accordingly, institutional analysis under the frame of methodological individualist perspective considers five parts: the attributes of the individuals, the attributes of the community, the attributes of events and the attributes of institutional arrangements, which interact with the attributes of a particular situation to produce actions, activities and strategies. The combination of assumption about these parts allows to predict results for individuals and for the *'aggregation of individual actions into outcomes for the community'* (p. 59).

The concept of the nesting of rules is further used in the analysis of institutions through the identification of three levels: operational, collective and constitutional (Ostrom 1990). The operational level is nested in the collective level, which is also nested in the constitutional level. Operational rules are found in the first level, where the '*processes of appropriation, provision, monitoring, and enforcement occur'* (p. 52). These type of rules '*change relatively rapidly - from day to day'* (Ostrom 2005, 58). The collective-choice level includes '*processes of policy-making, management, and adjudication of policy decisions'* (Ostrom 1990, 52) and the rules produced at this level change more slowly. Finally, the constitutional level affects the other two '*by determining who is eligible to be a participant and the rules to be used in crafting the set of collective-choice rules that, in turn, affect the set of operational rules'* (Ostrom 2005, 58).

On another note, the question of authority appears to be a core element within the institutional design principles. This concept is not elaborated by Ostrom (1990) or Cox et al. (2010).

However, Larson (2010) and Larson et al. (2015) do structure their work around the concept of authority when discussing common pool resources and property-rights; therefore, these works are used along with the work of Suksi (2011) about territorial autonomy. Paraphrasing Suksi (2011), authority could be understood as the power to make laws, managed through institutions of self-government in the case of autonomous units and through state structures in the case of governments. Therefore, the understanding of authority in this dissertation is focused in governmental structures, both indigenous and non-indigenous. As well, a further distinction must be made between the exercise of power and the actors who exercise it. Whenever the former is addressed, the word 'authority' in singular will be used; while the use of the plural form 'authorities' is reserved for discussing actors, e.g. environmental authorities or indigenous authorities.

Larson (2010) and Larson et al. (2015) use three concepts to discuss authority, two of which are incorporated in this research. The first corresponds to 'authority relations', which corresponds to the identification of three sets of interactions: '*(1) the relationship between the community and the state; (2) internal relations between community members and the community actor(s) or institution in authority; and (3) the relation between this institution and the state'* (Larson 2010, 1145). The second concept corresponds to the idea of 'legitimacy' of authorities, which can be external when recognition by the State is involved and internal when refers to what the authors refer to as 'community'[141]. However, the term 'community' is replaced here for Indigenous people or indigenous institutions, depending on the context.

Larson et al. (2015) provide a definition of legitimacy as '*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'* (Larson et al. 2015, 229). Nevertheless, this definition is closer to the concept of reputation than legitimacy. Therefore, legitimacy will be understood as being '*accordant with law or with established legal forms and requirements*'[142]. Whenever the concept of legitimacy is used, it will be clarified whether it refers to authorities, as used by Larson et al. (2015) or if it refers to rules, as used by Ostrom (1990), in relation to recognition made by external governmental authorities of rules created by appropriators.

[141] The third concept corresponds to 'domain of powers' which is defined as 'the '*specific sphere of competence' of an institution in authority'* (Larson 2010, 1145). This concept is not used because it can be replaced by more explicit notions such as competences and jurisdiction.
[142] according to the Meaning found in the Merriam-Webster dictionary for the word 'legitimate' as an adjective. See: https://www.merriam-webster.com/dictionary/legitimate

The concept of authority will be discussed with regard to the notion of territorial autonomy proposed by Suksi (2011), who affirms that

'the core of territorial autonomy involves a singular entity in what otherwise would be a unitary state or a federal state, so that the entity introduces an asymmetrical feature in the state through a transfer of exclusive law-making powers on the basis of provisions, which often are of a special nature and defined in such a manner that the state level remains with the residual powers, while the sub-state level relies on enumerated powers, at the same time as the state level contains no institutional representation of the sub-state entity' (p. 624).

According to Suksi (2011), four elements should be analysed concerning territorial autonomy: distribution of powers, participation in decision-making, executive power and international relations. However, the scale of analysis used by the author is intended to compare between autonomies found in different countries, in relation to their approach to federalism or to self-government. Therefore, the element of international relations will not be addressed. Along with Suksi's approach, this dissertation considers the discussion put forward by Goodwin (2019) in relation to autonomy in the co-production of public goods and services. According to this author, indigenous communities in Ecuador have coproduced water systems which are influenced by the '*form, quantity and frequency of contributions to coproduction'* (p. 509). This author defines autonomy as '*a heterogenous and multifaceted political practice, which reconfigures power and authority and creates new social and political relations'* (p. 509). Moreover, he suggests that autonomy is gradational and scalar, according to his analysis of water associations, where those operating at multiple levels retain a *'high degree of autonomous control over water at the local or community level'* (p. 509). This author further argues that it is necessary to recognise multiple dimensions in autonomy and to understand '*how the tension between engagement with and autonomy from the state plays out at different scales and between different actors'* (p. 512).

According to the definition proposed by Suksi (2011), indigenous territorial autonomy would be understood as: an indigenous territory within a State, where the indigenous territory has exclusive enumerated law-making powers, which often are of special nature, while the State remains with residual powers and there is no institutional representation of indigenous territories at the State-level. This definition contains the variables that would allow to unambiguously characterise indigenous territories as part of territorial autonomy arrangement, regardless of the national context in which they are embedded.

5 METHODOLOGY

The general research question guiding this dissertation aims at understanding complex phenomena, about which limited knowledge is available. The first steps taken here include a reflection about '*the methodological implications of particular decisions made during the course of a project'* (Seale 1999, 475) in order to add transparency to the research. This responds to the calls made to recognise that researchers approach studies through a '*basic system of ontological, epistemological, axiological, and methodological assumptions'* (Vasilachis de Gialdino 2009, 2), which have an effect over research itself. These assumptions come from scientific traditions that *'have place-based origins'* (Johnson et al. 2016, 8), which call for reflexivity, especially in relation to Indigenous peoples. Therefore, the first part of the chapter discusses the type of research and the rationale behind the design, which includes a discussion about conducting research with Indigenous peoples. The second part addresses the methods selected for collecting information and discuss their potentials and limitations with regard to the characteristics of this research. This part includes, as well, a brief description of the way in which the literature review presented in chapter three was conducted.

5.1 Research design

This research takes a qualitative approach through an interpretive paradigm[143] (Merriam, 2009), characterised by a *'focus on meaning and understanding'* (Merriam 2009, 14) and the consideration of the researcher as *'the primary instrument for data collection and analysis'* (Merriam 2009, 15). The qualitative approach is based on an interactive process in which *'the researcher and the participants intervene'* (Vasilachis de Gialdino 2009). As well, it entails an inductive process where data is used to build concepts, hypotheses, or theories in contrast to positivist perspectives that involve the testing of hypotheses (Merriam 2009; Harrison et al. 2017). Under a qualitative frame, there is a '*search for meaning and understanding'* (Merriam 2009, 39). Considering that the research question addresses a topic about which there is not much knowledge, aspects such as access to secondary information, previous knowledge of the researcher and availability of resources available, played a role in the selection of the research design. Furthermore, the time frame of this research, which was conducted under a three-year doctoral program, added

[143] Other paradigms identified by Merriam (2009) are positivist and post-positivist, critical and post-structural or postmodern.

another variable considered. Therefore, it was decided to conduct a case study research in order to respond to the need to generating concrete, context-dependent knowledge (Flyvbjerg 2011).

5.1.1 Case study research

Case studies are characterised for being focused in situations where '*the case itself is important for what it reveals about the phenomenon and for what it might represent*' (Merriam 2009, 43). Case studies are descriptive and aim at including *'as many variables as possible and portray their interaction, often over a period of time'* (Merriam 2009, 43). As well, they are heuristic, meaning that the case study '*illuminates the reader's understanding of the phenomenon under study'* (Merriam 2009, 44). According to Flyvbjerg (2011), opting for a case study is '*a choice of what is to be studied. The individual unit may be studied in a number of ways, for instance qualitatively or quantitatively, analytically or hermeneutically, or by mixed methods'* (p. 301). Similarly, Merriam (2009) argues that it is '*the unit of analysis that determines whether a study is a case study'* (p. 42). Therefore, the following section discusses the unit of analysis for the research, understood as the *'basic entity being analysed by a study and for which data are collected'* (Gallopin 2001, 21).

5.1.2 Unit of analysis and type of case study

This research is concerned with indigenous territories, which, according to the literature review, are usually larger than the spaces over which titling has been achieved. Nevertheless, in order to reduce the concern about boundaries definition, the focus is placed on *resguardos* as unit of analysis. *Resguardos* correspond to areas that have been demarcated, which have been titled and whose location and extension is clear[144]. Collective land titles provide the boundaries within which Indigenous peoples exercise their territorial autonomy. It is not the purpose of this research to neglect the more encompassing concept of ancestral or traditional territory. However, the use of *resguardos* as unit of analysis operationalises the bounded system required for case study research. *Resguardos* are further understood as social-ecological systems, formed by interactions between the indigenous collective (social system) and the territory (ecological

[144] Some colonial *resguardos* do not conform to this description because of the imprecise way in which limits were established in colonial times. These currently undergo clarification processes. However, r*esguardos* created under the laws of the republic of Colombia do correspond to this description.

system) bounded in the title. Therefore, the social-ecological system is embedded in the larger systems of ancestral or traditional territories.

Following Yin (2009), *'case study research can include both single-and multiple-case studies'* (p. 14), where the latter can take the form of collective; cross-case; multicase, multisite; or comparative case studies. Multiple case studies involve '*collecting and analysing data from several cases and can be distinguished from the single case study that may have subunits or subcases embedded within*' (Merriam 2009, 49). However, the possibility of conducting a multiple case study was limited by poor data availability as well as the dissertation's time frame. Therefore, a single case study strategy was followed.

Discussing single case studies, Flyvbjerg (2011) argues that if the objective is to collect the greatest amount of information, '*a representative case or a random sample may not be the most appropriate strategy (...) because the typical or average case is often not the richest in information'* (p. 306). Thus, the criterion used in this research was the maximisation of the collection of information. Therefore, an extreme or deviant case was preferred considering that it can help researchers to *'understand the limits of existing theories and to develop the new concepts, variables, and theories that will be able to account for what were previously considered outliers'* (p. 307).

In order to select a case among Colombian *resguardos*, a set of criteria was applied which responds to the goal of maximizing the possibility of finding Indigenous peoples concerned with environmental sustainability. These criteria, shown in Table 4, were used as filters that progressively reduced the number of eligible *resguardos*. The first corresponds to land-use, where the criterion of exclusion corresponds to the overlapping by protected areas, as well as the presence of land-use change regulations. This criterion aimed at limiting the possibility of having conservationist actors fostering environmental-related discourses and actions, as highlighted in some cases reviewed in the literature (Cayón Durán 2010; Comandulli 2016; Márquez Guerra 2016).

The second criterion corresponds to the exclusion of *resguardos* where ecosystems have already gone through advanced degradation[145], in order to avoid indigenous institutions focused mostly on land as a resource, which responds to the absence of other ecosystem components like the case studied by Van de Sandt (2007). Therefore, the selection is focused on ecosystems

[145] Degradation is understood according to the baseline conditions before significant transformations (Etter et al. 2008).

with low levels of transformation. This was achieved by using biogeographical regions[146] to cluster *resguardos* and taking the work of Etter et al. (2008) as a guide, which describes how the Andean and Caribbean regions of Colombia have been subject of major landscape transformations. Therefore, those *resguardos* found in these two regions were filtered out.

Table 4. Selection criteria for the case study.

Criterion		Details
Ecosystems	Low levels of transformation.	This increases the probabilit of studying a situation where actors can perceive changes in their lifetime. High biodiversity values are likely to be found, which reduces the possibility that actors dismiss the subject of environmental sustainability because of a perceived lack of 'environmental' importance. A natural absence of extensive forest covers reduces the possibility of finding actors promoting conservation plans.
Land use	Absence of protected areas.	This aims at avoiding that indigenous plans respond to the creation of the protected area.
	Land use change trends (legally promoted)[147].	This increases the possibility of having actors aware of ecosystem transformation.
Extractive activities	Presence of extractive industries in the *resguardo*.	This increases the probability of finding Indigenous peoples concerned with environmental matters and authority.
Indigenous people	Life plan document.	This increases the probability of finding indigenous environmental planning documents.
	Extensive command of Spanish language.	This reduces the difficulties related to translation from Spanish to an indigenous language and then to English.
Security	Low frequency of violent actions.	This reduces the probabilityy of finding obstacles to conduct research activities.

Source: author's own compilation.

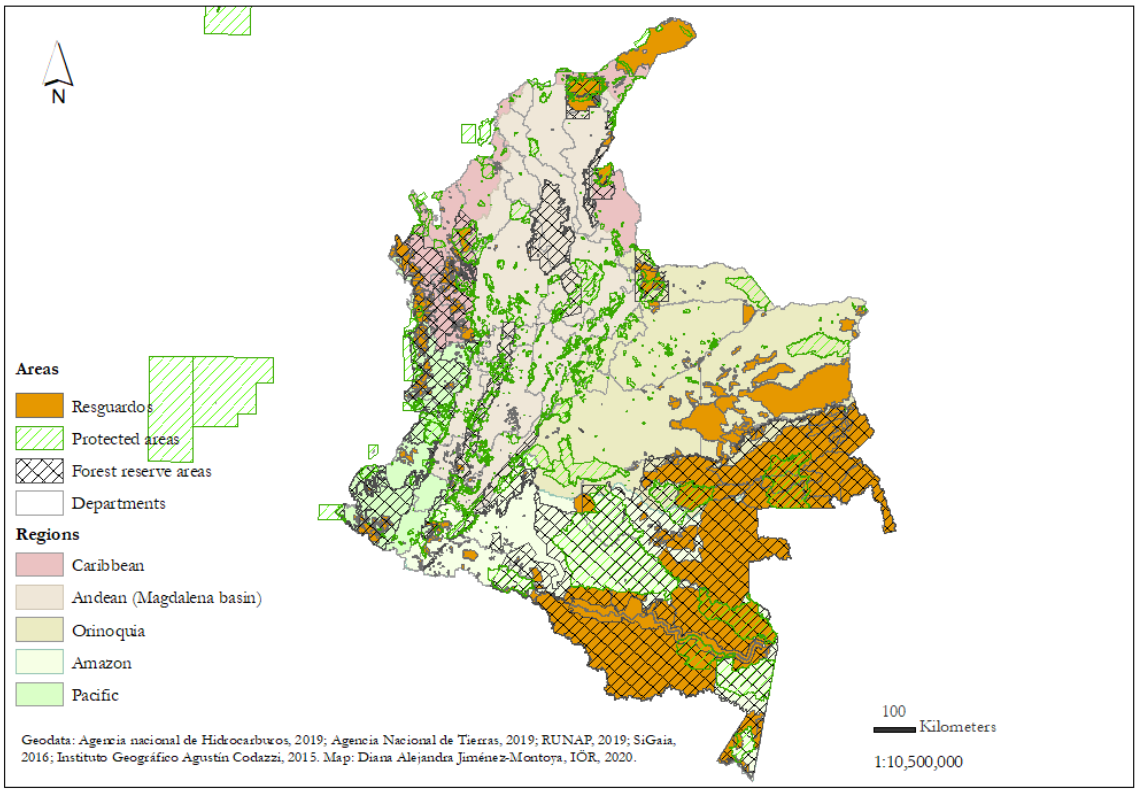
The third criterion considered *resguardos* with high environmental impact activities. This aimed at identifying extreme cases in which scarcely transformed ecosystems coexisted with high impact activities, which are understood here as extractive industries. In order to apply these

[146] Colombia is usually divided in six biogeographical regions: the Caribbean, Pacific, Amazon, *Orinoquia* regions, which are denominated as such according to the macro basin which they correspond to, and the Andean region, which is named after its topography.

[147] Mining and logging are increasingly producing land-use changes in indigenous territories; nevertheless, these activities are frequently illegal. Activities such as *coca* cultivation as part of drug trafficking, deforestation for cattle ranching and land speculation also affect them. See for example the report '*Rebel road expansion brings deforestation to remote Colombian Amazon',* in https://news.mongabay.com/2017/05/rebel-road-expansion-brings-deforestation-to-remote-colombian-amazon/

criteria, several maps were overlapped which led to a final group of *resguardos* among which the case was selected. The first part of the process can be observed in Map 1, which depicts *resguardos* overlapped by protected areas declared at the national level and forest reserves[148]. Forest reserves do not correspond to protected areas as classified by the international union for conservation of nature (IUCN); however, these were created to restrict land uses within their boundaries, hence they were considered here. It should be noted that national level protected areas also include private areas known as RNSC[149].

Map 1. Overlapping of protected areas over *resguardos*



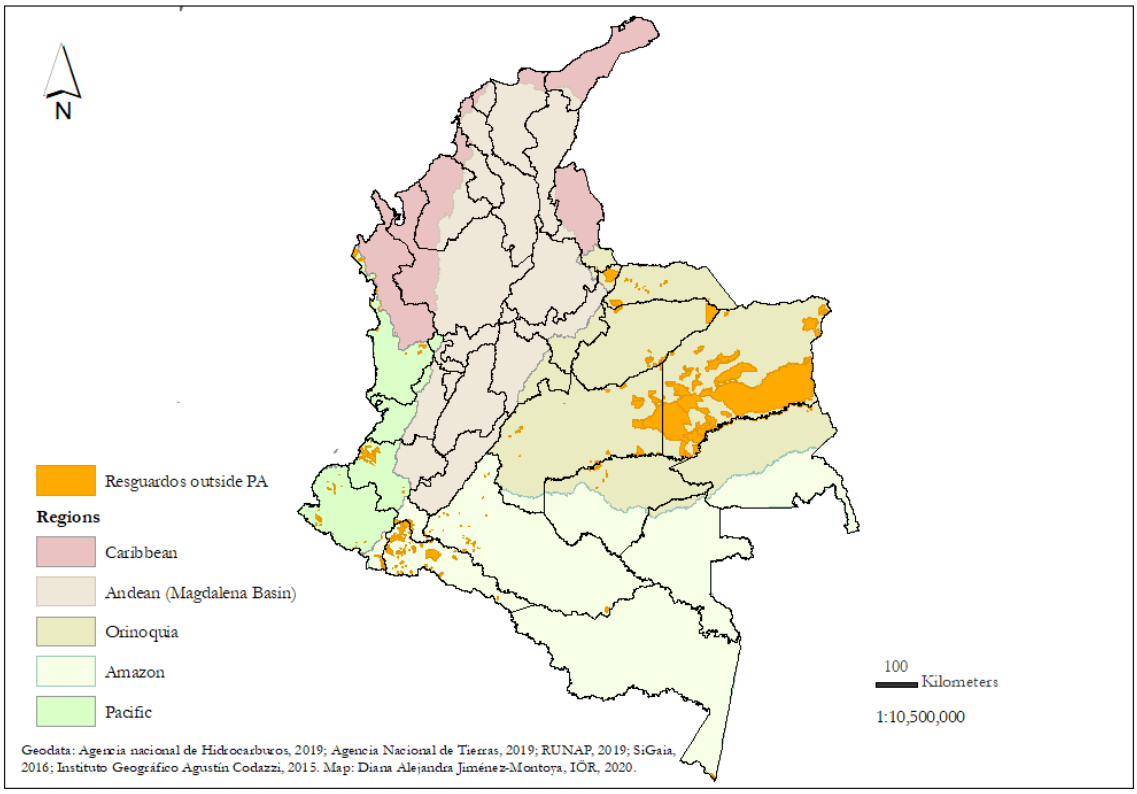
Source: author's own compilation. The map shows the overlapping of protected areas of the national level and forest reserve zones in each biogeographical region. The layer of forest reserves corresponds to information produced on the 03.03.2015, according to the description of the shapefile produced the unit for protected areas.

The basic input for this exercise was the map produced by the national lands agency of Colombia (ANT) of the total of registered *resguardos* in Colombia and their location. Other inputs corresponded to the map of national level protected areas of Colombia produced by

[148] In 1959, the Colombian government established regulations over the areas in which colonisation would not be promoted. This led to the demarcation of forest reserves zones (Villaveces Niño and Sánchez 2015).
[149] Some of which appear overlapped over resguardos (See for example *Caño Guaripa* in Vichada), even though both layers correspond to the same projection. None of these *resguardos* were considered.

the national unit in charge of their administration (PNN). Finally, the regional boundaries were provided by the map produced by the institute for environmental studies (IDEAM) and SiGaia about hydrological basins of Colombia. The maps and their respective databases are open for public use through several governmental online platforms[150], from which they were downloaded. These maps were worked through the software ArcMap 10.7.1. and its tool 'intersect' was used to identify *resguardos* that were overlapped by protected areas and forest reserves zones. Those layers that were not produced in the projection Magna Sirgas were converted using the tools included in ArcMap. Then, the tool 'erase' was used to remove all *resguardos* found in the Caribbean and Andean regions, which resulted in a group of eligible *resguardos* that can be observed in Map 2.

Map 2. *Resguardos* not overlapped by protected areas or forest reserve zones

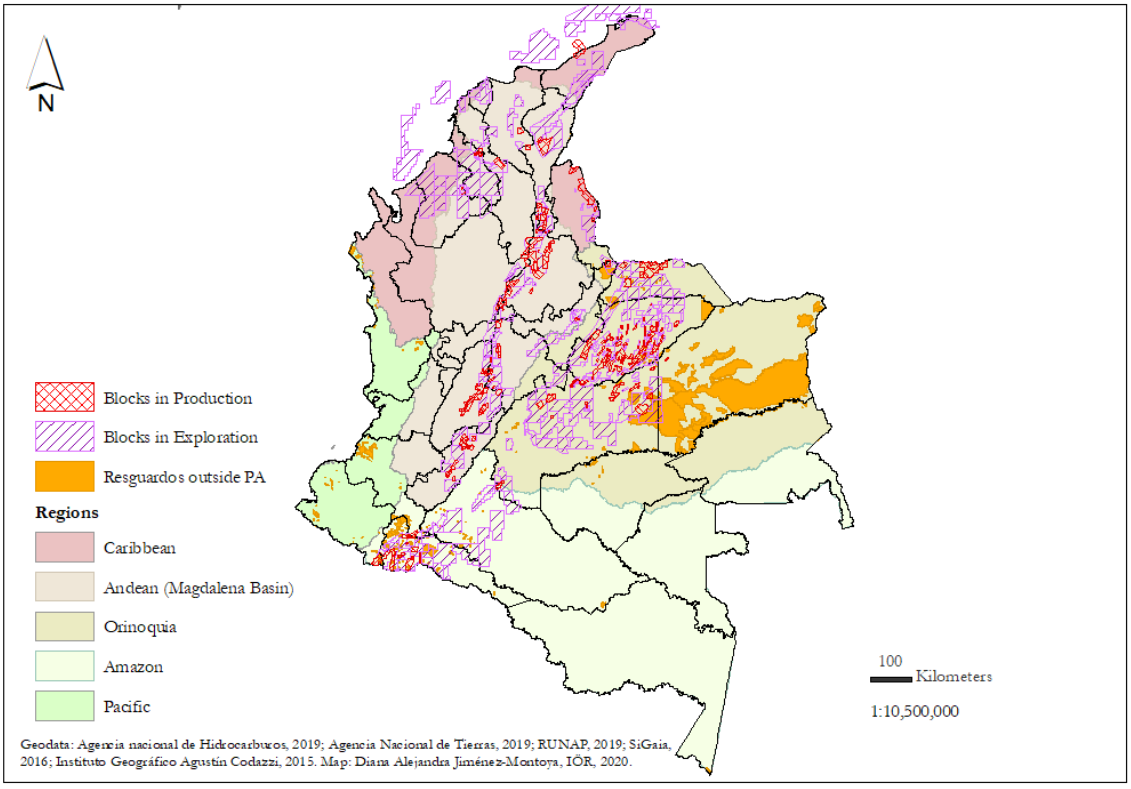


Source: author's own compilation. The *resguardos* that are not overlapped by protected areas of the national level or forest reserves are found in the Pacific, Amazon and *Orinoquia* regions.

[150] Mainly three repositories '*Datos abiertos*' (https://www.datos.gov.co/). Other platforms are UPRA (https://sipra.upra.gov.co/) and SIGOT (https://sigot.igac.gov.co/). The map of IDEAM and SIGaia was found through the online research engine of Arcmap.

The amount of *resguardos* that have been overlapped by protected areas and forest reserves adds to 368, which are listed in Appendix E. Concerning extractive industries, only hydrocarbons extraction was considered, considering that this sector had detailed geographical information available. Thus, the map produced by the national hydrocarbons agency (ANH), which shows hydrocarbon blocks according to their stage of development was used. The remaining *resguardos* were overlapped with the polygons of hydrocarbon blocks, considering only those blocks that were in exploration or production stage, as shown in Map 3. This resulted in 93 *resguardos,* listed in Appendix F. Among the group of *resguardos* overlapped by hydrocarbon blocks, 16 *resguardos*[151] were identified as being overlapped by blocks in exploration and extraction stages at the same time.

Map 3. *Resguardos* overlapped by blocks in exploration and production stages

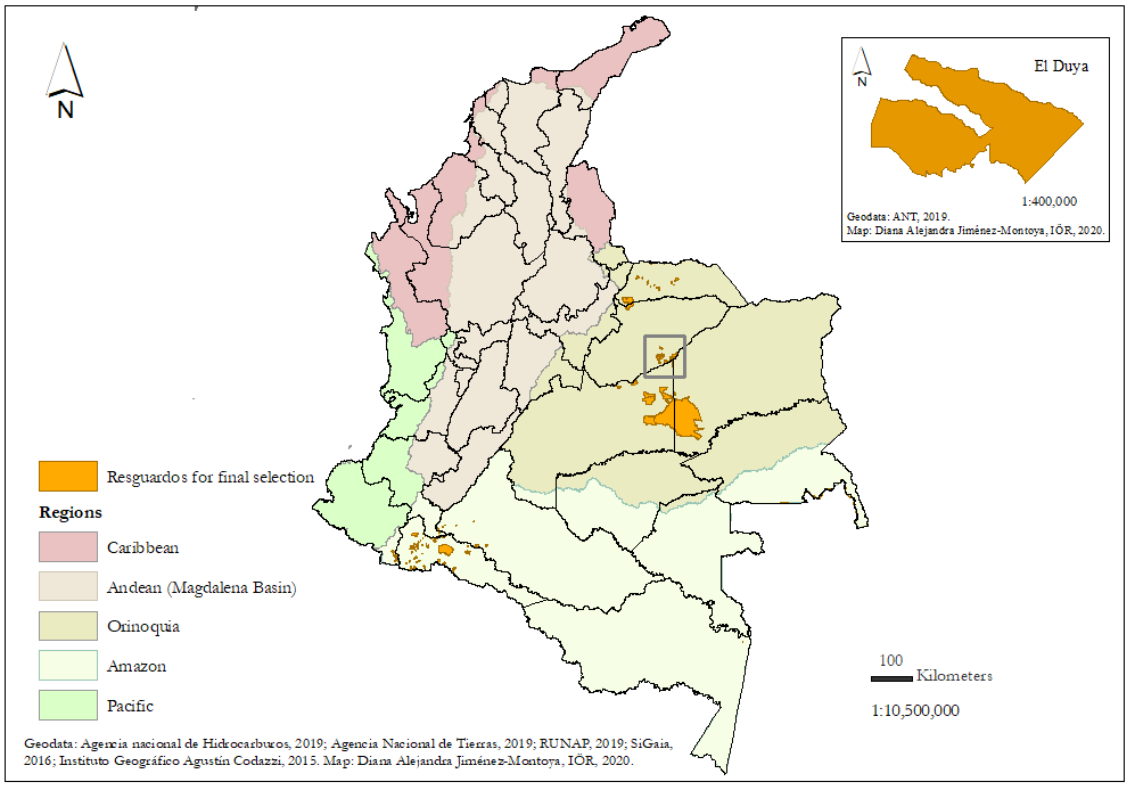


Source: author's own compilation. The map shows the overlapping of hydrocarbon blocks in exploration or production stages over the remaining group of *resguardos*.

[151] Agua Blanca, Alta y Media Guajira, Alto Unuma, Cañaveral, El Duya, ISHU AWA, La Cristalina, Los Guaduales, Paravare, Rumiyaco, San Juanito, San Miguel de la Castellana, Santa Rosa del Guamuéz, Sikuani de Domo Planas, Wasipungo, Yarinal.

The 16 *resguardos* are located far away from the Capital of Colombia, in the *Orinoquia* and Amazon regions, as shown in Map 4; therefore, the criterion of security was applied. Security concerns include armed conflict, illegal mining and drug traffic[152] and were based on the review of news reports and the alert systems created by the Colombian Office of the Defender of the Public (Ombudsman). Thus, the *resguardos* located in the departments of Arauca and Putumayo were excluded, considering that armed conflict has been more pervasive in these departments than in the others. The remaining *resguardos* were evaluated in terms of mobility and communication services that could facilitate research activities and the availability of planning instruments at *resguardo* level.

Map 4. Final group of r*esguardos* for selection



Source: author's own compilation. The square shows the location of the *resguardo El Duya* in *Orinoquia* region.

In this regard, the final group was reduced to the *resguardos* of the Salia people, considering the existence of a life plan and four mandates formulated for its development (Pueblo Salia y

[152] Armed conflict and drug traffic introduce extreme conditions that certainly make these *resguardos* deviant cases. However, practical considerations about the feasibility of conducting research under these circumstances discourages their selection as case studies.

Ministerio del interior 2015). Among the three Salia *resguardos* overlapped by hydrocarbon blocks in both stages, *San Juanito, Paravare* and *El Duya*, the last two had an organisational plan (*plan organizativo*). When deciding between the *resguardos Paravare* and *El Duya*, the information found about the latter showed that it was the largest of all Salia *resguardos*, that it was easily accessible by public transportation and that it had held a prior consultation already in 1994 (Rodríguez 2014). Therefore, *El Duya* was selected as a case study.

5.1.3 Research design limitations

The methodological approach of this dissertation is dominantly qualitative; which is usually criticised because of an alleged lack of objectivity. According to Seale (1999), the discussions about the quality in social research '*began from concerns designated with words such as validity and reliability, developed within the quantitative or scientific tradition, and then moved on under the pressure of critique from the qualitative research community'* (p. 465). As a response, new terms were developed such as '*Credibility, transferability, dependability and confirmability* [as] *substitutes for internal validity, external validity, reliability, and objectivity'* (Merriam 2009, 211), in order to strengthen qualitative research.

Concerning case study research, some critics have also been raised resulting in a paradoxical situation in which '*at the same time that case studies are widely used and have produced canonical texts, it may be observed that the case study as a methodology is generally held in low regard'* (Flyvbjerg 2011, 302). Therefore, concerns about case study research, as well as the general critics about qualitative research are addressed in the following sections.

5.1.3.1 Validity strategies

According to Merriam (2009), *'internal validity deals with the question of how research findings match reality'* (p. 213). However, the notion of reality under the qualitative paradigm has no univocal meaning for *'it is not a single, fixed, objective phenomenon waiting to be discovered, observed, and measured as in quantitative research'* (p. 213). Therefore, it is necessary to implement strategies to increase the credibility or internal validity of the study, which can be achieved through a procedural perspective (Creswell 2014), where a first step would correspond to triangulation through *'the use of multiple methods, multiple sources of data, multiple investigators, or multiple theories to confirm emerging findings'* (Merriam 2009, 215). For this research, two forms of triangulation have been

implemented: multiple methods and multiple sources of data. These are explained in the second part of this chapter.

A second step or strategy is '*member checking*' (Merriam 2009; Creswell 2014), which is also called respondent validation, where the idea *'is that you solicit feedback on your emerging findings from some of the people that you interviewed'*. For this dissertation, it was only possible to have a preliminary face-to-face validation done by the end of fieldwork in Colombia. The preliminary analysis could only be attempted remotely from Germany. Further strategies are discussed in Table 5.

Table 5. Validity strategies for this dissertation.

Strategy	Use in the dissertation
Rich, thick description	Multiple actors were addressed, who offered divergent perspectives.
Bias clarification	Reflexion on language and gender related barriers were considered in the design of fieldwork, to reduce their effects on data collection. The lack of knowledge and understanding about the indigenous worldview is, nevertheless, a limiting factor.
Presentation of negative / discrepant information	The sources of information were identified among different groups of actors and form different spatial levels.
Prolonged stay in the field	Since a prolonged stay was not possible, the dissertation relied heavily in secondary sources.
Peer debriefing	This role is assumed by the two supervisors of the dissertation, and, to a lesser extent, by scholars who comment the dissertation' progress reports.
External auditing	The doctoral programme in which this dissertation is developed includes two external evaluations during the writing process.

Source: author's own compilation based on Creswell (2014).

Concerning reliability, this concept refers to '*the extent to which research findings can be replicated*' (Merriam 2009, 220), it is '*based on the assumption that there is a single reality and that studying it repeatedly will yield the same results. This is a central concept of traditional experimental research'* (p. 220). This notion is not compatible with the qualitative approach taken in this dissertation; however, Creswell (2014) discusses that qualitative reliability can be understood as a concept that '*indicates that the researcher's approach is consistent across different researchers and different projects'* (p. 251). Consequently, the author proposes reliability procedures are suggested such as checking transcripts '*to make sure that they do not contain obvious mistakes made during transcription'* (Creswell 2014, 252)*;* checking that *'there is not a drift in the definition of codes'* (p. 252)*;* and guaranteeing communication and cross-checking of codes when several coders are involved. Merriam

(2009) points to the concepts of dependability or consistency instead of the notion of replicability, which mean that the researcher *'wishes outsiders to concur that, given the data collected, the results make sense - they are consistent and dependable. The question then is not whether findings will be found again but whether the results are consistent with the data collected'* (p. 221). On that ground, the first two recommendations of Creswell (2014) were implemented, the third one, however, did not apply to this research.

5.1.3.2 Critics to Case study research

According to Flyvbjerg (2011), the debate about the use of case studies involves several misunderstandings in terms of theory, reliability and validity; in which it is pointless to discuss the question of predictability considering that '*social science has not succeeded in producing general, context-independent theory and has thus in the final instance nothing else to offer than concrete, context-dependent knowledge. And the case study is especially well suited to produce this knowledge'* (p. 303). Addressing the critics towards the impossibility of generalising from single case studies, Flyvbjerg (2011) argues that they are

'*ideal for generalizing using the type of test that Karl Popper called "falsification," which in social science forms part of critical reflexivity. Falsification is one of the most rigorous tests to which a scientific proposition can be subjected: If just one observation does not fit with the proposition, it is considered not valid generally and must therefore be either revised or rejected'* (p. 305).

Nevertheless, some authors question Flyvbjerg's argument considering that it has been developed for deterministic, not for probabilistic hypotheses; since the '*evidence found in a limited number of observations can never falsify a probabilistic proposition in logical and strict terms'* (Sarmiento et al. 2018, 7). Furthermore, considering case studies as falsification-oriented, entails an engagement with the understanding that is contradictory with the interpretive type of research adopted in this dissertation. Merriam (2009) states that *'a single case or small, non-random, purposeful sample is selected precisely because the researcher wishes to understand the particular in depth*' (p. 224). Therefore, generalization is not the purpose of this research. Instead, it is the thorough understanding of the phenomenon under study, through which a coherent answer can be provided for the general research question. In this line of thought, this research takes an approach similar to Ostrom (1990), when she discusses that:

'*Biologists also face the problem of studying complex processes that are poorly understood. Their scientific strategy frequently has involved identifying for empirical observation the simplest possible organism in which a process*

occurs in a clarified, or even exaggerated, form. The organism is not chosen because it is representative of all organisms. Rather, the organism is chosen because particular processes can be studied more effectively using this organism than using another' (p. 26).

Therefore, the results of this research cannot be generalized; however, *'that's not to say that nothing can be learned from a qualitative study'* (Merriam 2009, 224). Instead of assuming *'that individual, non-generalizable studies are limited in contributing to "the accumulation of knowledge'* (p. 226); Merriam (2009) suggests that this assumption is challenged considering that *'connections between qualitative studies and one's world have to be built by readers, who must (...) make generalizations by analogy and extrapolation, not by a watertight logic'* (p. 226). However, the defence that Flyvbjerg (2011) makes of the case studies provides elements to enrich the validity strategies of the research. Furthermore, it was used for the selection of the type of case study. It should be noted that the author considers case study as a method, while the approach of this dissertation is to consider it as a research strategy (Kohlbacher 2006).

The alternative to generalisation adopted in this research is the 'transferability' of qualitative studies, in which '*the burden of proof lies less with the original investigator than with the person seeking to make an application elsewhere'* (Merriam 2009, 225). Transferability can be achieved through *'the use of rich, thick description'* (p. 227); considering the 'Maximum variation in the sample' *(p.* 227). For this research, transferability has been considered through the inclusion of a rich description of the case. As well, the concept of maximum variation has been addressed through the selection of several kinds of sources of information, which *'allows for the possibility of a greater range of application by readers or consumers of the research'* (Merriam 2009, 227).

5.1.3.3 Research and Indigenous peoples

This section responds to an ongoing discussion in the field of anthropology regarding the notion of 'social' or 'cultural' difference. The debate has challenged the assumption that there are social and natural constructions, because calling *'something a social construct is a staple of our contemporary critical vernacular, but doing so implies not only that we can happily divide the world into things that are 'social' and things that are 'natural', but also that the latter can be taken for granted'* (Heywood 2017, 9)[153]. The divide between the social /cultural and the natural, was acknowledged in the

[153] According to Heywood (2017), there has been an 'ontological turn' in Anthropology, where the idea of difference 'relativizes perspectives on the world, and thus by implication universalizes the nature of the world itself. It claims that epistemologies (forms of knowing or understanding) vary, but that there is only one ontology (form of being or existing). Many worldviews, only one world. The ontological turn, instead, proposes that worlds, as well as worldviews, may vary' (p. 2)

theoretical framework regarding planning practice; however, from the methodological point of view, Viveiros de Castro (2004) asserts that *'the distinction nature/culture should be subject of critic, but not to conclude that such a thing does not exist. The essentially methodologic value (…) is understood here as an essentially comparative value'* (p. 38).

Descola (2004), discusses how *'amazon cosmologies are part of a larger group of concepts of the world which do not establish any distinction between nature and society'* (p. 31); in contrast to the naturalism or *'the belief that nature exists'* (p. 32). According to the author, naturalism is the main '*principle of our own cosmology and impregnates both our common sense and our scientific practice* (…) *which*, *structures our epistemology and, especially, our perception of other means of identification*[154]*'* (p. 32). However, the author recognises that the consideration of 'nature' as a social construction poses a formidable challenge for knowledge (p. 33). Therefore, he proposes to '*go beyond dualism'* (p. 34) and *'stop treating society and culture, as well as human faculties and physical nature, as autonomous substances and casual instances* (p. 34). Reflecting on naturalism, Viveiros de Castro (2004) argues that the *'conception of the categories of nature and Culture (be it to confirm them or deny them)* is *inapplicable to the Amerindian cosmologies'* (p. 50). According to the author, for Amerindians *'the common reference point for all beings in nature is not the man as a species, but humanity as a condition'* (p. 42). Furthermore, Amerindians propose *'one culture, multiple natures, constant epistemology, variable ontology'* (p. 55).

Such differences in the ways of understanding the world, so contrasting with the way in which scientific research pursues knowledge, represent a further challenge for achieving coherence in the dissertation, regardless of the design and methods used. While the rationality in research is *'about satisfying a need to know, and a need to extend the boundaries of existing knowledge through a process of systematic inquiry'* (Smith 1999, 170); the question about whose knowledge is to be extended is rarely considered; therefore, Smith (1999) asserts that researchers should

'recognise the power dynamic which is embedded in the relationship with their subjects. Researchers are in receipt of privileged information. They may interpret it (…) in terms of a covert ideological framework. They have the power to distort, to make invisible, to overlook, to exaggerate and to draw conclusions, based not on factual data, but on assumptions, hidden value judgements, and often downright misunderstandings' (p. 176).

Considering these arguments, it is acknowledged here that the epistemological and ontological frames of this dissertation emerge from a naturalistic rationality. Moreover, the inherent contradictions arising from epistemic differences, as recognised by anthropologists, and the imbalances arising from power asymmetry, as recognised by decolonizing approaches, lead to

[154] The author defines 'identification' as '*ways to define own and alien frontiers'* (Descola, 2004, p. 32).

the incorporation of additional measures in this research such as '*being reflexive and conscious about the positionality of the researcher'* (Ugarte 2014, 408). Reflexivity is conceptualised as involving three types. Self-reflexivity or reflexive transparency; '*which asks the researchers to identify what hidden assumptions may underpin their research'* (Nicholls 2009, 121). Interpersonal reflexivity, which '*calls for an evaluation of interpersonal encounters and the researcher's ability to collaborate with others'* (p. 122); and finally, collective reflexivity and catalytic validity, which entails '*asking about the process of how the collaboration determined the frames of inquiry'* (p. 123).

Smith (1999) considers that '*researchers must go further than simply recognizing personal beliefs and assumptions, and the effect they have when interacting with people' (*p. 173)[155]. She argues that the researcher should further question the assumption that '*individual researchers have an inherent right to knowledge and truth. We should not assume that they have been trained well enough to pursue it rigorously, nor to recognise it when they have 'discovered' it'* (p. 174). Finally, in their discussion about state-based planning systems, Porter and Barry (2015) argue that *'any theoretical and methodological frame (…) must be analytically and politically sensitive to the historical and contemporary oppression that state-based planning often brings about'* (p. 173). Most of these considerations have been included in this research; however, the extent to which these questionings have been addressed properly falls must be judged by the evaluators of this dissertation and by field respondents.

5.2 Methods

The selection of methods was made according to the qualitative approach of the research, as well as the key topics addressed in each specific research question. However, factors such as information availability and characteristics of relevant actors were crucial in the selection. Thus, considering that the unit of analysis, the *resguardo*, is understood as a social-ecological system, the social-ecological systems framework (SESF) was used to guide data collection through the identification of potentially relevant variables, which are included in Table 6. It should be noted that the version of the SESF used in this dissertation is based on the work of McGinnis and Ostrom (2014); however, the original version of this framework is included in the Appendix B.

[155] According to this author, several questions should be asked which range from determining who defines the research problem, to how the researcher is accountable for the research and its outcomes.

Table 6. variables of the social-ecological system framework considered for data collection.

First-tier variable	Second-tier Variables	Description
Social, economic, and political settings	Economic development.	Economic role in regional context.
	Demographic trends.	Immigration and population growth related to economic activities.
	Political stability.	Political conditions and armed conflict.
	Other governance systems.	Other *resguardos*, neighbouring peasant organisations[156] (JAC), municipality administration.
Related ecosystems	Flows into and out of focal SES.	Savanna biome.
Resource systems	Sector.	Gallery forests, savannas, wetlands.
	Clarity of system boundaries.	Legal demarcation and title, border landmarks, fences.
	Human-constructed facilities.	Settlement infrastructure, roads, ports.
	Location.	Resources contained within *resguardo*'s boundaries
Actors*	Number of relevant actors.	Inhabitants of the *resguardo* (indigenous, non-indigenous), neighbours.
	Socioeconomic attributes.	Access to public services, sources of employment.
	History or past experiences.	Creation of the *resguardo,* projects and plans formulation, spatial planning participation
	Location.	Human settlements.
	Knowledge of SES/mental models.	Salia understanding of the *resguardo,* previous research about ecosystems.
	Importance of resource.	Livelihoods.
	Technologies available.	Economic activities, transportation, infrastructure.
Governance systems	Government organisations.	Municipality and department government national agencies / institutes; regional environmental authority.
	Network structure *.	Organisation of *resguardo's* government structure, interaction with external actors.
	Property-rights systems *.	Individual vs collective use of land, wildlife, water, livestock, infrastructure.
	Rules in use *.	Operational-choice rules: individual features of access, use, transformation, restoration regarding land, wildlife, water, livestock, and infrastructure.
	Network structure*.	Constitutional-choice rules* : conditions for accessing, using, transforming, conserving and restoring of natural resources and infrastructure.
	Monitoring and sanctioning rules .	Individuals in charge of rules enforcement, procedures for implementation of monitoring and sanctioning.

[156] Juntas de acción comunal (JAC).

Action situations: Interactions → Outcomes	Harvesting.	Use of ecosystem's components within the *resguardo*
	Information sharing.	Access to key information.
	Deliberation processes.	Decision-making instances in the *resguardo.*
	Conflicts.	Land tenure, control over natural resources.
	Networking activities.	Joint initiatives with other *resguardos* and regional actors; interaction with national, municipal, department, regional actors.
	Monitoring activities.	Regarding ecosystems use and state, and governmental policies.
	Social performance measures.	Internal evaluation of rules' efficiency for land, wildlife, water, infrastructure, livestock use; monitoring and sanctioning.
	Ecological performance measures.	Evaluation of environmental sustainability of the *resguardo.*

Source: author's own compilation based on McGinnis and Ostrom (2014). * indicate changes in the nomenclature in relation to the SESF version of 2009.

In addition to these variables, others were included according to the literature review in order to enhance the understanding of the case study. These variables correspond to Historical continuity and Policy area, which are concerned with alternative variables of the Governance systems tier (McGinnis and Ostrom 2014); as well as the variable Biophysical disruptions, which is concerned with complex social-ecological systems (Anderies et al. 2004). Further reflection on the appropriateness of methods considered the particularities already discussed for Indigenous peoples, as well as the regional context of the *resguardo*. Once the mapping of topics was made, they were distributed according to their relevance for each specific research question. Table 7 shows the outcomes of this distribution.

The identification of topics and the selection of methods were further informed by the conditions of the context where the case is found. Considering that the collection of information required of interaction with the sources identified, special attention was given to the characteristics of *Orinoquia* region. Inhabitants of this region are characterised by a high sense of belonging to the region, which is expressed through denominating themselves as '*llaneros*'[157], which means they are born in the '*llanos'* or plains that characterise this region; in contrast to those who come from other places, who are called '*guates'*. Therefore, approaching regional actors would be understood as a '*guate'* asking questions. Moreover, the period for conducting fieldwork coincided with the 2018 national presidential elections, which included

[157] Indigenous peoples born in this region are not considered '*llaneros'*. This subject is discussed in chapter six.

campaign time and first and second round election dates. It also coincided with the arrangements of the fieldwork phase of the national census. Finally, when approaching public officers, the Colombian legal frame establishes that they must guarantee access to information as long as sensitive matters are not involved, such as security, child rights or public health[158]. Nevertheless, the access to information and interaction with officers can still be very limited due to time and resources constraints.

Table 7 Key topics addressed by specific research questions.

Specific research question	Topics	Source of information	Methods
RQ1: How do indigenous institutions mediate the relation between humans and the territory?	Indigenous conceptualisation of nature. Rules, norms, users, sanctions, conflicts, actors. Indigenous understanting of environmental sustainability. Spatial expressions of institutions. Environmental changes.	Secondary information. Indigenous actors. Field conditions.	Document analysis. Qualitative observations. Interviews.
RQ2: How are indigenous territories planned in Colombia?	Non-indigenous understanding of environmental sustainability. Traits of State and indigenous spatial environmental planning. Actors of environmental planning in indigenous territories.	Secondary information. Indigenous actors. Public officials. Non-indigenous non-governmental actors.	Document analysis. Qualitative observations. Interviews.
RQ3: How is territorial autonomy exercised by Indigenous peoples concerning ecosystems and their components?	Concept of territorial autonomy. Implementation of decree 1953 (2014). Progress and limitations for territorial autonomy. Exercise of authority in *resguardos*.	Secondary information. Indigenous actors. Public officials. Non-indigenous non-governmental actors.	Document analysis. Interviews.

[158] The regulations on these matters are addressed by law 1712 (2014).

Source: author's own compilation

The absence of prior relationships with people of *El Duya* and the uncertainty about field conditions, led to discard the use of surveys for data collection, in order to avoid the risk of producing rejection among potential respondents. Therefore, two qualitative methods were selected for primary data collection, interviews and observation, in addition to the use of secondary sources. The decision to use a multiple methods approach was based on the argument of Harrison et al. (2017), who suggest that different methods can *'be mutually informative in case study research where together they provide a more synergistic and comprehensive view of the issue being studied'*. The following sections present an explanation of how the selected methods are understood in this dissertation.

5.2.1 Document analysis

The third method used for this dissertation is document analysis. Under the umbrella denomination of 'document', several kinds of materials are considered here such as interview transcripts and field diary notes. The technique used was qualitative content analysis based on the work of Mayring (2000, 2014) and Kohlbacher (2006). Nevertheless, documents such as legal acts or planning documents were too specific to be analysed through the same categories developed for the qualitative content analysis. Therefore, the documents were divided into two groups. The first corresponds to secondary information, which was based on three main sources: information available online, information provided by key actors during fieldwork and information provided after the filing of a formal written request. The second group corresponds to primary information, analysed through qualitative content analysis.

5.2.1.1 First group: secondary sources

The secondary sources of information were used for two purposes, to conduct the literature review and to provide an answer for the specific research questions. The information gathered for the literature review was obtained mainly through the use of specialised search engines, fundamentally google scholar, using three keywords: Indigenous peoples, environmental sustainability and territorial autonomy. This led to the identification of publications and authors arising from different sources, journals and publishers. In addition to this, web of

science was used with the three keywords and combinations between them. Other important sources of literature were the repository known as 'Digital library of the commons', hosted by the Indiana University, as well as the web page of the SESMAD project (Cox et al. 2016, 46). Finally, literature produced in Spanish and Portuguese languages was reviewed using the google search engine, where the three keywords and their combination were used once translated into both languages.

When searching for works concerning Indigenous peoples and environmental sustainability, the use of the different search engines resulted in the identification of works that were not relevant[159]; while others were found to be only partially related. The scarcity of works addressing the concept of environmental sustainability led to conduct the review using the references provided by Richardson (2008), which were later used in a snow-ball fashion to widen the scope of the review. As well, the search also considered the words ecological sustainability and sustainability to increase the number of works that could potentially be used for the literature review.

The outcomes of the review were used as an input for identifying secondary sources that could contribute to answer the specific research questions. Some information was found online prior to fieldwork. However, most of the relevant information was acquired during the time spent in Colombia through key actors that were contacted during fieldwork. These documents are listed in Table 8 according to the level to which they correspond.

The research was conducted in a transitional period for the national government of Colombia; therefore, two national development plans were considered: 2014-2018 and 2018-2022. In the case of Corporinoquia's action plan and the development plan for Orocué, both were made for the period 2016-2019 and their replacements cannot be analysed during the dissertation's time frame. These documents were subjected to a general review, then, key words were used to search for specific information such as: *resguardo*(s), *El Duya*, Salia people, Indigenous peoples, indigenous territories, indigenous communities, indigenous authorities, Orocué, Casanare, *Orinoquia*, territorial planning. The information was extracted in spreadsheets, using paragraphs as a unit of analysis, which were further sorted according to its source. The

[159] Fordham, A. E., and Robinson, G. 2018. Mechanisms of change: Stakeholder Engagement in the Australian Resource Sector through CSR. *Corporate Social Responsibility Environmental Management* 25: 674-689. Loginov, Vladimir; Ignatyeva, Margarita and Balashenko, Valeriy. 2018. Consistent Approach to Assess the Comfort of Living in the Northern and Arctic Areas. *Economy of region* 1, 4: 1399-1410.

information found in these paragraphs was later used for contrasting and enriching the analysis of primary information.

Table 8. Documents considered in the analysis.

Level	Document	Author
National	National development plan.	National government of Colombia
	Draft of decree conferring indigenous authorities to exert environmental authority related functions.	MPC
	Guide for certifying the ecological function of indigenous *resguardos* in Colombia.	Ministry of environment
	Environmental Licenses for oil extraction activities in *El Duya*.	ANLA
Regional	Action plan 2016-2019.	Corporinoquia
	Environmental determinants for Corporinoquia jurisdiction.	Corporinoquia
Department	Land-use plan reports for Casanare.	Government of Casanare
Municipality	Development plan of Orocué 2016-2019.	Government of Orocué
	Land-use plan of Orocué update.	Government of Orocué
Resguardo's network	Life plan.	Salia people
	Territorial mandate.	Salia people
	Social balance mandate.	Salia people

Source: author's own compilation

Considering that the second specific research question required of a detailed reconstruction of the environmental planning processes in the *resguardo El Duya*; several dossiers created by the national environmental licensing authority (ANLA) were reviewed. These dossiers were found on the platform known as 'VITAL'[160], which is managed by the ANLA and was built to centralise and make transparent all the procedures regarding environmental matters for all Colombian environmental authorities. It was possible to identify relevant dossiers because of the orientations provided in a formal response sent by ANLA to a formal petition filed on the

[160] See: http://vital.anla.gov.co/SILPA/TESTSILPA/Security/Login.aspx

27th of May of 2019[161]. Thus, a preliminary review of eight dossiers was made, in order to identify which of them did contain relevant information for El Duya, as shown in Table 9.

Table 9. Oil exploration and exploitation blocks of interest for *El Duya*.

Block / Contract	Company	Criterion for consideration	ANLA Dossier	License
Garcero-C	Perenco Colombia Limited	Proximity	LAM0165	Res. 410 of 02.05.1995 - Ministry of environment.
Corocora-C	Perenco Colombia Limited	Overlapping	LAM472	Res.409 of 09.03 2007 - Ministry of environment.
Lince	Interoil Colombia exploration and production	Proximity	LAM3590	Res. 773 of 9.05.2007 - Ministry of environment.
Lince-Leopardo	Interoil Colombia exploration and production	Overlapping	LAM 3657	Res. 1927 of 31.10.2007 - Ministry of environment.
Altair Zona 1	Interoil Colombia exploration and production	Proximity	LAM4489	Res. 2185 of 2009 - Ministry of environment.
Block west *Oropéndola*	Perenco Colombia Limited	Proximity	LAM3261	Res. 2121 of 26.10.2010 - Ministry of environment, housing and territorial development.
Llanos 30 *Norte*	Parex resources Colombia Ltd	Overlapping	LAM 5129	Res. 1628 of 16.12 2015.
Llanos 78	Vetra	Overlapping	None	In process.

Source: author's own compilation

Then, the research was focused on three dossiers, two of which corresponded to blocks that overlapped the *El Duya*. The third one corresponds to a block whose infrastructure is located in the basin of *Caño Duya*. The rest of the blocks were not considered because in the absence of overlapping, it was not possible to establish connections to the *resguardo El Duya*. The only exception corresponds to the block *Llanos* 78, which was not included in the analysis because

[161] The response received the code 2019069409-1-000 in relation to the dossiers 15DPE39534-00-2019, LAM3592, LAM3657, LAM3590, and LAM3261.

it still has no environmental license. In the case of *Llanos* 30, even though its polygon overlaps the *El Duya*, none of the activities in the block can be linked to this *resguardo*.

The three dossiers under analysis correspond to *Garcero*-C, *Leopardo* and *Corocora*-C, each of which contained 315, 63 and 81 items respectively. Some of the items contained folders with several files, mainly corresponding to oil companies' reports. Nevertheless, not all items were available for download. Therefore, the files were reviewed one by one in order to verify their availability. The downloaded files were reviewed through keywords that would be used when referring to the Salia people such as indigenous, *resguardo El Duya*, (indigenous) guard, *Piñalito* and ASAISOC (traditional Salia authorities association of Orocué), as shown in Table 10, in order to investigate the involvement of the Salia people in the exercise of environmental authority. Some of the documents were images and could not be converted into text, therefore, they were reviewed page by page.

Table 10. Files reviewed for the dossiers *Garcero*-C, *Leopardo* and *Corocora*-C.

Block	Total items in dossier	Downloaded and searched for keywords	Keywords				
			Indigenous	*Resguardo El Duya*	ASAISOC	Guard	*Piñalito*
Garcero-C	321	182	8	1	0	0	0
Leopardo	63	48	13	12	1	3	3
Corocora-C	81	53	5	4	0	1	2
Total	465	283	26	17	1	4	5

Source: author's own compilation

The documents that were downloaded consist mainly in field visit reports made by the ministry of environment and later by ANLA, correspondence between authorities and oil companies, legal documents enacted by the national and regional environmental authorities, as well as compliance reports sent by the oil companies. These documents were organised through spreadsheets. Some information was extracted to produce maps, whenever coordinates or geographical cues were provided. Finally, as some people could not be interviewed during fieldwork, some petitions were filed to state organisations in order to access information through the constitutionally enshrined mechanism known as 'petition right' (*derecho de petición*). Table 11 contains a summary of the petitions.

Table 11. Formal petitions sent to Colombian governmental agencies.

Institution	Date of submission	Registration number	Date of Response
Corporinoquia	20/05/2019	YO-2019-06140 DEL 22 DE MAYO	18/06/2019
	25/06/2019	YO-2019- 06140	22/08/2019
National institute for environmental, hydrological and meteorological studies (IDEAM)	21/05/2019	20199050038412	06/12/2019
Research institute for the Amazon region (SINCHI)	21/05/2019	---	10/06/2019
National planning department (DNP)	27/05/2019	20196000280892	18/06/2019
National environmental licensing authority (ANLA)	27/05/2019	2019069409-1-000	18/06/2019
National hydrocarbons agency (ANH)	15/08/2019	20196410194981 Id: 425320	15/08/2019
Government of Casanare	21/05/2019	1190521200010529	18/092019
Ministry of interior	21/05/2019	EXT_S19-00008801-PQRSD-008801-PQR 2536557119141071026	30/07/2019
Colombian institute for Anthropology and history (ICANH)	23/08/2109	5181	26/09/2019
Ministry of environment	21/05/2019	7965	16/12/2019
National agency for lands (ANT)	27/05/2019	20196200525952	Pending
Research institute for the Pacific region (IIAP)	21/05/2019	No reply	
	23/08/2109	No reply	
Institute for marine and coastal research (INVEMAR)	21/05/2019	No reply	
Research institute for biological resources (IAVH)	21/05/2019	No reply	

Source: author's own compilation

During the last days or writing this dissertation, some of the petitions are reported to be 'in process'; however, if they are ever responded it will not be possible to use them for this research. As well, it should be clarified that even when it was possible to receive a response from these institutions, not all of them provided relevant information. Nevertheless, it was possible to triangulate most of the information required. When this was not possible, it is indicated in the text explaining the reasons for each case.

5.2.1.2 Group two: primary sources

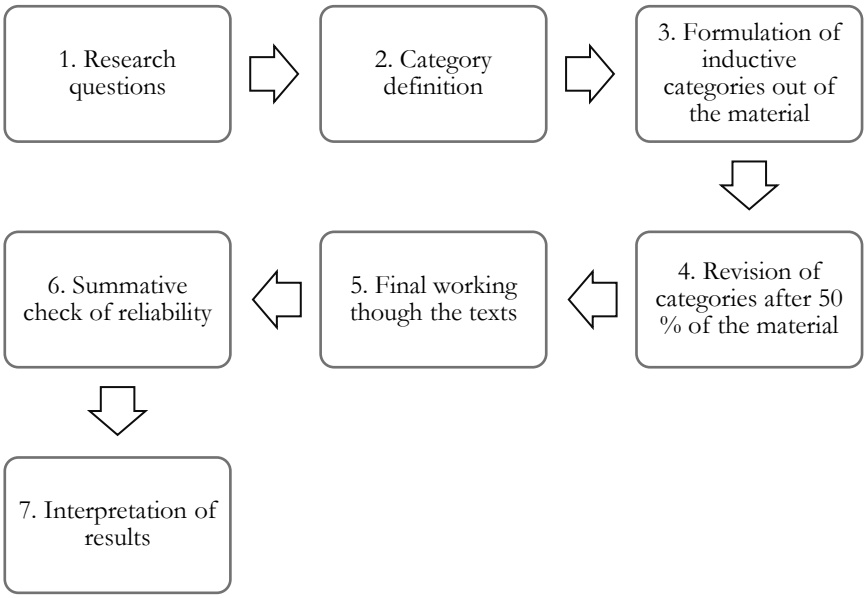
This information emerges from the interview transcripts and the notes produced during fieldwork, which were included in a field diary, as described in section 5.2.3. about qualitative observations. In the case of the interview transcripts, they were analysed through a technique known as qualitative content analysis, which was adapted to the needs of the research. The following section contains an overview of the technique, in order to provide the essentials for understanding how the material was processed.

5.2.1.2.1 Qualitative content analysis

Content analysis has been defined as '*a systematic procedure of assignment of categories to portions of text'* (Mayring 2014, 31); while qualitative content analysis corresponds to *'an approach of empirical, methodological, controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without rash quantification'* (Kohlbacher 2006). This approach was selected considering its potentials to enhance '*rigor, validity and reliability of case study research'* (Kohlbacher 2006). However, some limitations have been identified concerning the youth of this approach, for which *'further development and improvement'* (Kohlbacher 2006) is advised. The distinctive feature about qualitative content analysis is the use of a coding agenda (Kohlbacher, 2006), which aims at defining categories in a structured way.

In order to develop the coding agenda, inductive and deductive categories must be generated. The procedure for inductive categories is explained in Figure 5, which involves deriving categories from the material. It requires formulating a criterion according to *'the theoretical background and the research question, which determines the aspects of the textual material taken into account'* (Mayring 2000, 4). The categories emerging from the material are further reviewed and reduced until they no longer repeat or overlap themselves. Once the inductive category forming process is carried out, it is necessary to assess whether some parts of the text required further clarification. Then, the results obtained through this process can be analysed.

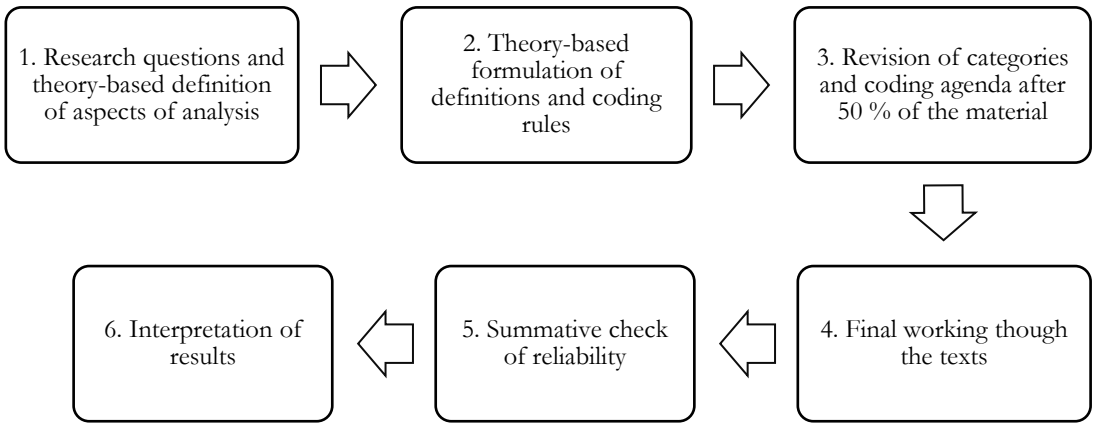
Figure 5. Step model of inductive category development.



Source: adapted from Kohlbacher, (2006). The key concepts included in the research questions guide the review of the material. The relevant information identified in the review is used to generate inductive categories, which are evaluated once 50 % of the material has been reviewed. The categories are reworked and reassigned again for the final working of texts. Finally, the material is reviewed to check for consistence and the results are interpreted.

The next stage corresponds to the formation of deductive categories, which correspond to *'prior formulated, theoretical derived aspects of analysis, bringing them in connection with the text'* (Mayring 2000, 4). The categories are derived from theoretical sources and the process of their formation aims at providing '*explicit definitions, examples and coding rules for each deductive category, determining exactly under what circumstances a text passage can be coded with a category'* (Mayring 2000, 5), which is explained in Figure 6. However, it is possible to select between approaches according to the characteristics of the material and the research. According to Kohlbacher (2006), the *'rule-based approach of qualitative content analysis is supposed to guarantee that the whole empirical basis is systematically dealt with'*, which would distinguish this approach from other types of content analysis. Finally, the resulting categories can be contrasted with the inductive ones, in order to enrich the amount and quality of information obtained through the coding process.

Figure 6. Step model of deductive category development.



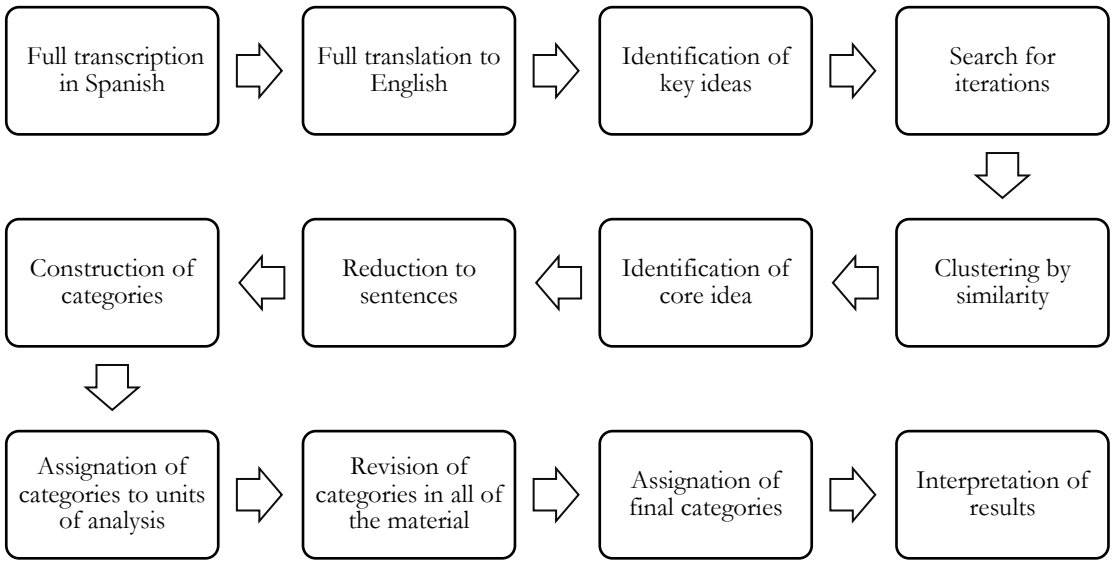
Source: adapted from Kohlbacher (2006). The key concepts included in the research questions and the theoretical framework are used to define categories, along with the coding rules. Once the categories have been assigned to the units of analysis of 50% of the material, the categories and coding agenda are revised. Then, adjusted categories and agenda are used for the final working of texts. The consistency of categories is reviewed before interpreting the results.

5.2.1.2.2 Analysis of interviews

Following the approach described by Mayring (2014), the coding agenda was structured based on the three specific research questions, using the topics identified for each of them as a guide for the selection of relevant information. Then, the process of generating inductive categories was started through the disaggregation of the answers provided by interviewees into key ideas, which were later clustered according to their similarity. Subsequently, core ideas for each cluster were identified and grouped under a label that was later used to build the categories.

The revision of categories was made through the clustering of interviews according to the administrative level of each interviewee: *resguardo*, municipality, department and national level. Then, the excel function 'filter' was used to identify iterative topics inside each cluster. The outcome was later compared with the other clusters. After reducing similar categories to the same label, the original categories were modified when necessary. The resulting categories were then assigned to the paragraphs of the summary of each interview, which allowed to find information more quickly. As well, it contributed to get an overview of those categories that were more frequent and which categories could be related to location, ethnicity or gender. The procedure that was used is described in Figure 7.

Figure 7. Inductive coding of interviews.



Source: author adapted from Kohlbacher (2006). The inductive procedure began by translating the interviews and creating a summary in English. Then, key ideas were identified as well as iterations. Those ideas that were similar were clustered and a core idea was identified. Then, the paragraphs were reduced to sentences which were used to produce categories. The categories were assigned to all units of analysis and then were revised, checking reliability and reformulating or deleting categories. The final categories were assigned again to the units of analysis and used for the interpretation of results.

The deductive procedure applied for the transcripts was based on the work of Ostrom (1990) and Cox et al. (2010) about institutional design principles; Anderies et al. (2004) about design principles for social-ecological systems; McGinnis and Ostrom (2014) about the social-ecological system framework and the work of Jojola (2013) concerning indigenous planning principles. Building on these categories, a coding guideline was developed as suggested by Mayring (2014) in order to organise the coding process. This can be observed in Table 12. In the cases in which none of these categories could be assigned to text passages, another category was used, which was labelled 'emergent topic'. The other parts of the procedure correspond to the steps described in Figure 6. Once the process of deductive category formation was through, one of the categories was eliminated and the assignation of text portions to each category was revised.

Table 12. Theory-based categories for coding.

Categories	Definition	Source
Clearly defined boundaries 1.a User 1.b Resource	Actors and Physical elements inside the *resguardo*, which can be separated from the larger biophysical environment through clear boundaries.	Cox et al. (2010, 15)
2. Congruence between appropriation and provision rules and local conditions 2.a Congruence with local conditions 2.b Appropriation and provision	Rules about appropriation (benefits obtained by users) and provision (inputs required in the form of labour, material or money) are congruent with *resguardo*'s social and environmental conditions. Proportionality between appropriation and provision rules.	Cox et al. (2010, 15)
3. Collective-choice arrangements	Participation of individuals in the modification of operational rules that affect them.	Ostrom (1990, 93)
4. Monitoring 4a. users 4b. the resource	There are monitors who are accountable to the users. They monitor appropriation and provision levels, as well as the condition of the resource.	Cox et al. (2010, 15)
5. Graduated sanctions	Appropriators who violate operational rules may be subject of sanctions assessed by other appropriators, officials accountable to appropriators or by both.	Ostrom (1990, 94)
6. Conflict-resolution mechanisms	Appropriators and officials have rapid access to low-cost *resguardo* arenas to resolve conflicts.	Ostrom (1990, 100)
7. Minimal recognition of rights to organise	Appropriators have the right to devise their own institutions and are not challenged by external governmental authorities.	Ostrom (1990, 101)
8. Nested enterprises	Appropriation, provision, monitoring, enforcement, conflict resolution and governance activities are organised in multiple layers of nested enterprises in the *resguardo*.	Ostrom (1990, 101)
Policy area	Relevant policy area such as Environment; mining; Territorial planning, Conservation; formulated from a supra-*resguardo* level.	McGinnis and Ostrom (2014, 8)
Network structure	Connections among rule-making organisations and the population subject to these rules corresponding to the supra-*resguardo* level[162].	McGinnis and Ostrom (2014, 10)
Property rights systems	Property-rights systems are not rules; however, they define interactions among people and specific duties and obligations at the supra-*resguardo* level.	McGinnis and Ostrom (2014, 9)
Repertoire of norms and strategies	Multiple ways in which culture affects decisions regarding social-ecological systems.	McGinnis and Ostrom (2014, 10)
Historical continuity	Distinguishes between systems of governance that have been in place for long periods of time and those more recent.	McGinnis and Ostrom (2014, 10)

[162] Here two of the variables proposed by the authors are integrated: population and network structure. See McGinnis and Ostrom (2014, p. 9).

Resource Systems	Larger biophysical systems to which *resguardo*'s ecosystems are directly linked, such as basins.	Author
Social, Economic, Political Settings	Exogenous influences over the *resguardo*.	McGinnis and Ostrom (2014, 4)
Biophysical disruptions	Severe weather, human-induced hazards.	Anderies et al. (2004, 7)
Process informed by indigenous worldview	Ability to use elements of their philosophies and operationalize them in a manner that affirms their *'holistic practices'*.	(Jojola, 2013, 465)
Untranslated indigenous voice	Cultural lessons are '*predicated upon experiential learning, social engagement and adherence to traditional customs*.'	(Jojola, 2013, 466)
Native self as essence of indigenous scholarship	Indigenous individuals carry the '*weight of their own education as lived through experience*.'	(Jojola, 2013, 467)

Source: author's own compilation based on Ostrom (1990); Anderies et al. (2004); Cox et al. (2010) and McGinnis and Ostrom (2014). The theory-based categories correspond to the institutional design principles, elements suggested to complement the SESF regarding governance systems; external situations or disruptions that should be considered for systems, as well as the three principles for indigenous planning.

Finally, both groups of categories were compared, and the group of deductive categories was used as a guide to organise the inductive categories. However, a few of the inductive categories could not be assigned to any of the cluster, which constituted an emerging input obtained through the interviews. The use of qualitative content analysis was useful to work review the material in a structured and detailed way. The categories; however, were not included as part of the results because they were used as a tool to extract information rather than as an analytical framework.

5.2.2 Interviews

According to Koven (2014), interviews should be understood beyond the practice of asking questions as *'speech events'* (p. 500), where *'participants use language and other sign systems in spatiotemporally, socially situated interactions in ways that reflect and create those interactions'* (p. 501). Considering the expected interactions in the field, the design of the interviews for this dissertation considered a more flexible approach in contrast to highly structured types known as standardized (Merriam 2009, 90; Koven 2014, 505) and focused interviews (Peters 2014, 8). Along the spectrum ranging from structured to narrative (Peters 2014, 8) or unstructured/informal (Merriam 2009, 89) interviews, semi-structured interviews were the main type used for this dissertation. Additionally, some narrative interviews were carried out during the stay at the *resguardo*.

Semi-structured interviews were chosen because of the flexibility in the use of guidelines. Therefore, rather than aiming *'at capturing easily coded data within pre-established categories'* (Barker 2012, 6), the interviews were used to understand the complexity of the case. Some authors raise concerns about how interviews *'determine the structure of the conversation, they risk restraining the interviewee from explicating his or her own relevance system and communicative patterns'* (Peters, 2014, p. 8). Furthermore, Barker (2012) mentions that *'differences between interviewer and interviewee with regards to age, gender, sexual orientation, race and class may shape the interview process'* (p. 6). However, the very nature of qualitative research is to co-produce knowledge through the interaction of the researcher, the participant and the context.

In order to address these pitfalls, the design of the interview considered: '*1) Short, clear questions lead to detailed responses from participants*; 2) *Questions that ask participants to recall specific events or experiences in detail encourage fuller narratives* and 3) *A few broad, open-ended questions work better than a long series of closed-ended questions'* (DeMarrais 2004, 61). Accordingly, Barker (2012) further suggests that, to avoid the constraining of information obtained through the interview, the researcher should make sure that '*participation in the interview is reciprocal and balanced*' (p. 6). Finally, Koven (2014), argues that interviewers and interviewees may have different practices and understandings about the interview (p. 506). Therefore, interviews started by explaining the purposes of the research and then asking for their consent. Interviewees were further asked about the possibility to record the interview and they received an explanation about the future use of the recordings, which was also stated in the consent forms. However, not all interviewees agreed to be recorded.

5.2.2.1 Instrument design and interviewees identification

The identification of relevant topics for the interviews was based on the variables of the social-ecological systems framework and the topics included in Table 7, which were used to produce a poll of questions or items that could potentially be incorporated in the final instrument. Then, according to the topics of each research question, items were organised into groups in order to identify redundancies. Several types of guidelines were produced using the items available according to the type of actor, which are included in Appendix C. The final version of the guidelines was designed in Spanish. In order to make the guidelines more relevant, texts

of the declarations of the national indigenous organisations in Colombia[163], as well as press reports involving the representatives of the national government, were used to select appropriate wording for the guidelines.

The selection of the potential interviewees was operationalised through the use of the national policy framework in order to identify relevant actors for environmental planning in indigenous territories. A list of interviewees is included in Appendix D. The national environmental policy in Colombia is structured in a hierarchical way, based on law 99 enacted in 1993 which promotes environmental management as decentralized, democratic and participatory (Molina Triana 2014, 24). This law creates the national environmental system (SINA), which is defined as a *'Group of orientations, norms, activities, resources, programs and institutions that allow the setting of the general environmental principles included in this law'* (Art. 4). The SINA has been established in such a way that the ministry of environment corresponds to the upper level. However; territorial and administrative criteria play a role in defining how hierarchical levels are organised.

Environmental institutional frames in Colombia are *sui generis*, for they were established with financial and administrative autonomy (Canal Albán and Rodríguez Becerra 2008). Therefore, in addition to the national level institutions, the SINA includes territorial entities as well as the 33 regional autonomous corporations (CARs)[164], which are the main regional environmental authorities within their jurisdictions (Blackmann et al. 2005). The role of Indigenous peoples in the SINA was outlined in several articles of law 99, among which the most important states that '*indigenous territories will have the same functions and duties defined for the municipalities regarding environmental matters*'[165]. Accordingly, the potential interviewees were selected among members of the SINA of multiple administrative levels. The full list of potential interviews is included in Table 13. However, not all scheduled interviews were conducted due to several reasons, including the cancellation and postponing of meetings by potential interviewees, as well as the lack of response from contacted people.

[163] A document containing the main demands of Indigenous peoples towards the government of Colombia was issued in October of 2017, in which the demand field 'territory and environment' addresses concerns related to environmental authority, land titling, mining activities, prior consultation among others.
[164] Regional environmental management institutions *Corporaciones Autónomas Regionales* (CAR). When first created, these institutions had their geographic boundaries defined by watersheds, following the model of the Tennessee Valley Authority. Later on, the watershed criterion was lost because in large part because each of Colombia's departments lobbied for its own CAR (Blackmann et al. 2005). Corporinoquia is *Orinoquia* region's CAR.
[165] Nevertheless, the practical effects of Article 67 have been subject of legal disputes about which the national constitutional court has issued several judgements. See judgment T-236 (2012).

Table 13. Areas selected for interviews.

Level	Institution/ Sector	Target area	Conducted interviews during fieldwork
National	Ministry of culture	Direction of regional promotion	1
	Institute of anthropology and history	Area of social anthropology	0
	Ministry of interior	Indigenous affairs	1
	National planning department	Department of environment and sustainable development	0
	National lands agency	Department of ethnic affairs	0
	Ministry of environment and sustainable development	SINA coordination	0
	Research institutes	Biological resources Alexander von Humboldt	0
		Hydrology, meteorology and environmental studies (IDEAM)	0
	National indigenous organisation	Territory and environment; life plans	3
	Permanent negotiation roundtable (MPC)	Technical secretary	1
	Academia	Centre for the studies in *Orinoquia*, Los Andes University; Centre of intercultural studies, Javeriana University.	0
	NGOs	Etnollano, national environmental forum	2
Regional	CARs	Corporinoquia	2
Department	Department of Casanare	Environment and planning offices; health secretariat.	4
Municipality	Municipality of Orocué	Planning office; municipal planning council	2
	ASAIASOC	Counselships: territory, youth, women and family, direction.	4
Resguardo	Salia people	Dwellers of *El Duya*	15

Source: author's own compilation. The interviewees at the national level corresponded to public officers, experts from non-governmental indigenous and non-indigenous organisations. The regional level corresponds to Corporinoquia staff; however, it does not correspond to an administrative unit defined by the law.

The selection was made aiming at high directive positions considering the likeliness of the interviewee to be knowledgeable about the topic. The focus on directive positions was based on considering that these individuals tend to be knowledgeable about their jurisdiction, even

though they may lack of technical details. Therefore, they can point to knowledgeable individuals that may be easier to approach if higher ranked interviewees suggest it. In contrast, there are cases where a middle rank individual is preferred, when the degree of specific information required is higher and directive positions are difficult to reach. Snowballing was also applied when possible. Differences among actors are related to their institutional affiliation, ethnicity, sector and administrative level. It should be noted that the regional level does not correspond to a legally defined category in Colombia; nevertheless, it is used here because the environmental authority's jurisdiction corresponds to a large area known as *Orinoquia* region. Furthermore, considering that the *resguardo* level is not always contained within the boundaries of a municipality and can sometimes be very large, the denomination 'local' was avoided.

5.2.2.2 Recording of interviews

The interviews were recorded through a digital voice recorder whenever the interviewee allowed it. The use of a recording device was implemented despite the risk of having an *'impact on the interview process'*[166] (Barker 2012, 7), considering that a potential loss of information was a more important concern. Nevertheless, some interviews could not be recorded because of the reticence of the interviewee. In these cases, notes were taken in the fieldwork diary, aiming at capturing key terms and ideas without interrupting the flow of the dialogue. After each interview, observations were written about the interview as soon as possible. In most cases, the language used for note taking was English; however, there were moments in which long answers were transformed into key ideas in Spanish. Furthermore, several interviews in the *resguardo* were carried out with the presence of the person who acted as field assistant. She also contributed in recalling some of the information provided by the interviewee afterwards.

There were also narrative interviews with people in the *resguardo*, of which notes were taken including contextual information. Frequently, interviewees were not alone and attention to personal matters would interrupt the interview. Most of the times, this resulted in obtaining more information as the discussion triggered new ideas. However, this had caused that some statements could not be assigned to individuals.

[166] According to this author, it may constrain the interviewees' answers, while for some peoples *'it has the effect of encouraging them to behave more formally and to provide answers that they think the interviewer wants to hear'* (Barker 2012, 7).

5.2.2.3 Interview transcription and coding

All voice recorded interviews were transcribed manually, word by word, obtaining a *'coherent text, simple to understand but representing the original wording and grammatical structure'* (Mayring 2014, 45). The transcription and coding processes were carried by the researcher. Each transcription was kept in a separate file; however, neither transcriptions nor codes are included in the dissertation. Furthermore, the processing of the information is made in such a way that no connexion between the individual source and the content can be made. In addition to interview transcriptions, the notes obtained during and after interviews are compiled in the fieldwork diary and provide information about the date and place of the interviews. These notes have not been transcribed into a digital file; however, they have been scanned for data safety purposes.

Among the 17 sectors that were targeted, interviews could only be made for nine of them, which resulted in 33 interviews. Lacking information was obtained through a formal petition, as described in section 5.2.1. Data obtained in each interview was extracted from the transcriptions and fieldwork diary notes. Each transcript was organised in a spreadsheet, producing a matrix for each interviewee, where the content of the interview, originally in Spanish, was organised through a process of clustering of topics and key ideas, which later produce categories. Considering that there were not many interviews, content analysis software was not required. The following section discusses the way that qualitative content analysis was used.

5.2.3 Qualitative observations

Observation is understood as the activity in which the researcher *'takes field notes on the behaviour and activities of individuals at the research site. In these field notes, the researcher records (…) activities at the research site'* (Creswell 2014, 239). Consequently, observation involves *'active looking, improving memory, informal interviewing'* (Kawulich 2005). The use of observation contributes to identify situations that *'informants have described in interviews'* (Kawulich 2005), as well as to identify elements that were not addressed by them. Hence, observation can serve *'as a way to increase the validity of the study, as observations may help the researcher have a better understanding of the context and phenomenon under study'* (Kawulich 2005). Nevertheless, some pitfalls were considered in relation to the researcher's involvement in the activity, as advised in the literature (Merriam 2009). Another pitfall is related to the risk of losing valuable information. Creswell (2014)

recommends developing an observational protocol, which consists of an outline that allows the researcher to distinguish descriptive from reflective notes and is meant to be used while observing (p. 244). However, the feasibility of writing while observing is highly context dependent. Moreover, '*the act of observation itself may bring about changes in the activity, rendering it somewhat atypical*' (Merriam 2009, 232), limiting thus the use of such protocol.

During fieldwork, it was possible to take notes simultaneously only in few occasions, especially when no conversation partner was present. For improving the quality of note taking, Kawulich (2005)[167] recommends using '*exact quotes when possible*' and '*pseudonyms to protect confidentiality*'; providing '*descriptions without inferring meaning*'; Inclusion of '*relevant background*' and context information; Provision of '*date, time, place and name of the researcher on each set of notes*'.

Considering these elements, exact quotes were used in the fieldwork diary, which where signalled as such through the use of quotation marks. Pseudonyms were also used; however, sometimes it was important to include the name of the person, in order to stablish kinship or to provide context and location. Descriptions are provided but there are also reflections that are related to what was being described. In this case, the phrase 'I consider' was added, in order to highlight that such note did not correspond to interviewees, for example. In addition to this, writing in English contributed in avoiding accidental or intentional reading of information by respondents, especially during the stay in the *resguardo*.

5.2.3.1 The observation role of the researcher

According to (Kawulich 2005), the degree of involvement of the researcher in the culture under study influences the quality and amount of data that can be obtained. For this research, the observation exercise was located in the stance called '*the observer as participant*', in which the researcher can '*participate in the group activities as desired, yet the main role of the researcher in this stance is to collect data, and the group being studied is aware of the researcher's observation activities*' (Kawulich 2005). The literature indicates that the observation process might be misinterpreted by the people involved. Nevertheless, it is difficult to assess the extent to which this may have affected this research.

This approach was chosen because, given the context, it was likely to face cultural, background and gender-related biases towards the researcher. Accordingly, the identity of the researcher

[167] This work is found in an electronic journal; therefore, the pages cannot be included in these quotes.

and the purposes of interaction were clearly stated in the *resguardo* and in the office of the municipal indigenous association. Furthermore, it was possible to attend some communal meetings, some organisational meetings of the association, as well as a prior consultation process held in the *resguardo*. Nevertheless, some events were out of bounds, such as the meetings of the *resguardo*'s government and meetings with a consultancy organisation that was formulating an environmental impact management plan related to oil extraction activities. Despite such restrictions, it was possible to move freely within the *resguardo* and talk to anyone who consented to.

While observing is inherent to the interviewing process, not all observing activities were concomitant with interviewing. The note taking of interviews and observations were registered in the same field diary. A sewn notebook was chosen in order to avoid a potential loss of pages. Notes were taken on a day-to-day basis, contributing thus to the reconstruction of the way events unfolded during fieldwork, not only in the setting of the *resguardo* but also in the urban contexts where many of the interviews took place. Photographs of the landscape and infrastructure were also taken in order to enrich the recollection of the situation found in the *resguardo* afterwards. In every case, permission was asked to take pictures whenever possible, even if they didn't frame people.

5.2.3.2 Fieldwork

Research activities in Colombia started on the ninth of April and concluded on the 15th of June of 2018. The first steps corresponded to contacting people and acquiring information in Bogotá. Then, a second group of contacts was established in Yopal, the capital of Casanare, located away from Bogotá. Later, the researcher moved to the municipality of Orocué and to the *resguardo El Duya*. The stay at the *resguardo* lasted three weeks, the first two were consecutive and the third one a week before returning to Germany. The stay was designed with a second entrance in order to avoid being in the region during the election day, mostly for security reasons[168]. During the time spent in Orocué, the office of the traditional Salia authorities association of Orocué (ASAISOC) was visited daily, which contributed to gaining knowledge about their functioning, as well as to getting in contact with key actors. Moreover, it contributed in the development of trust relationships with the counsellors, which resulted in

[168] Armed actors have frequently increased their activities during election days in Colombia. The road to reach the municipality of Orocué has been subject of armed actions by the guerrilla group ELN. Moreover, the presence of paramilitary groups had also been reported for the region.

facilitating the access to the *resguardo* and to internal information; which is remarkable, considering that no former relationships had been established with the researcher until then.

Fieldwork was designed also to avoid congress elections were avoided, because, unlike presidential election, congress and municipal level elections greatly affect daily lives of people. As well, activities were planned before the start of the rainy season, in order to avoid problems with mobilisation. This was important because, in addition to the floodable savannas in which the *resguardo* is located, 2018 was expected to be an above average rainy year, as it effectively was. Furthermore, the uncertainty at the time regarding who the next president would be and its impact on the security conditions throughout the country, posed an additional concern in case fieldwork was conducted after the new president was elected.

The people of the *resguardo* were approached through several steps, starting on the national level. After interviewing representatives of the national indigenous organisation (ONIC) in Bogotá, contact information of regional key actors was obtained. One of the interviewees at this organisation was the brother of the president of ASAISOC and provided his phone number. Once in Yopal, the president of ASAISOC was contacted through a WhatsApp message and an appointment was set, during which it was possible to discuss the research activities and get to know the counsellor of finances. Then, they offered the possibility to attend an upcoming assembly with the governors of each of the Salia *resguardos* that are part of the association in the municipality of Orocué. There, a presentation for the governors was made in which the goals of the research were explained. After solving some questions, the governors approved that research activities were carried out. Nevertheless, before conducting research in *El Duya*, approval from the general assembly was still required. Therefore, the governor of *El Duya* offered the possibility to attend an upcoming assembly in which, after much discussion, permission was granted to initiate research activities, as well as to stay in the *resguardo.* The discussions revolved around the fact that it was a women's organisation general assembly in which the people of the settlement of *Cucurital* were not present. However, some elders present in the meeting advocated for allowing the research to start right away, considering that unlike other actor, the researcher was showing respect for the protocol of asking for permission.

The approval of the research activities by the governors, as well as by the inhabitants of the *resguardo,* was made under the conditions of providing feedback about the findings during fieldwork, as well as going back to the *resguardo* once the defence of the dissertation takes place, in order to present the results of the research. The first condition was complied with during a

community meeting in which it was possible to explain the preliminary findings. In addition to that, the president of ASAISOC was briefed on these matters and a written copy of the field findings was submitted to the association.

Field activities were possible thanks to the services of a woman chosen by the assembly as a field assistant, whose services were payed according to the amount agreed during the meeting with the assembly and covered guidance and transportation with her motorcycle. Permission to stay inside the *resguardo* was also granted, wherever a host would allow it. The lodging and food services were provided by the people in charge of the *cabildo* house. No further payments were made. On the other hand, approaching non-indigenous actors was more difficult to do in Bogotá than in other places. Each interview entailed a formal request through electronic mail, sometimes several, where the researcher's institutional affiliation contributed to receive some positive answers. Nevertheless, there were actors that could not be reached, even when there was an initial positive response to mails, a concrete date for the interview was not achieved.

Finally, the social-ecological systems framework (SESF) was used as a guide for observation activities, taking the variables described in Table 6 as a check-list for data to be observed if possible. In addition to this list, a printed map of the *resguardo* and surroundings was taken to the field in order to facilitate the spatial understanding of the area. Observation activities were also informed by the use of two Geographic location devices, Garmin Etrex and Garmin 76CSx., were used in order to locate key sites in the *resguardo*. Moreover, it as possible to have access to some community-made maps during fieldwork, as well as some maps produced concerning seismic prospection lines, which contributed in grasping the scope of seismic activities in the *resguardo* and its surroundings.

6 STUDY AREA: VARIABLES IN THE SOCIAL-ECOLOGICAL SYSTEM FRAMEWORK

The *resguardo El Duya* was demarcated for the Salia people[169] in the *Orinoquia* region of Colombia. It is described in this chapter according to the social-ecological systems framework (SESF) (McGinnins and Ostrom 2014). According to Nagendra and Ostrom (2014), the SESF can be used as a diagnostic tool which enables analysts to '*define variables of interest and organize them into connected groups, as well as to ensure that they consider a broad universe of potentially applicable variables before identifying specific factors'* (p. 4). Consequently, among the six variables of the first tear in the SESF, Resource units was not included here because '*a resource system can be meaningfully thought of as having units'* (Hinkel et al. 2015, 6). Therefore, as the scale of analysis includes several ecosystems, the variable Resource units is already considered in the variable Resource systems.

Concerning the second-tier variables identified by McGinnins and Ostrom (2014), those selected were grouped according to their similarities, while those that were not considered and the reasons for their exclusion are included in appendix C. It should be noted that some of the second-tier variables included by McGinnins and Ostrom (2014) as part of the variable Governance systems cover aspects that concern the institutional design principles, such as rules and monitoring. The overlapping information could be included here as a description and in the design principles as part of the results; however, in order to avoid duplication, this chapter focuses in external-oriented variables such as: Government organisations, Nongovernment organisations, Network structure and Property-rights systems. The remaining four, concerned with rules in the social-ecological system, are discussed in the analysis of the institutional design principles.

6.1 Social, economic and political settings; related ecosystems

Under the logic of the social-ecological systems framework (SESF), the systems under analysis are embedded in external social, economic and political settings as well as in other ecosystems. Therefore, both first-tier variables are grouped here as external factors. For *El Duya*, such factors correspond to the subnational entities in which this *resguardo* is embedded, as well as

[169] Other denominations include *Sáliba* or *Sáliva* in Spanish, as well as Saliva in English literature. The term 'Salia' corresponds to how this people denominate themselves and is preferred in this dissertation.

the biogeographical region where it is found. The analysis of this region is based on its understanding as a frontier territory, part of 'the other Colombia': *'a politic and symbolic category with a territorial base,* [but] *not an exactly geographically bounded area'* (Gómez Buendía 2010, 11) which refers to those places characterised by higher levels of poverty, low human development conditions, illegal economies and violence (Serje de la Ossa 2006). Frontier territories can be found throughout the six biogeographical regions of Colombia; nevertheless, they are more evident in the Pacific, Amazon and *Orinoquia* regions, where highly biodiverse ecosystems, Indigenous and Black peoples coincide (Asher and Ojeda 2009).

6.1.1 Economic development; demographic trends; political stability; climate patterns; pollution patterns; flows into and out of focal SES

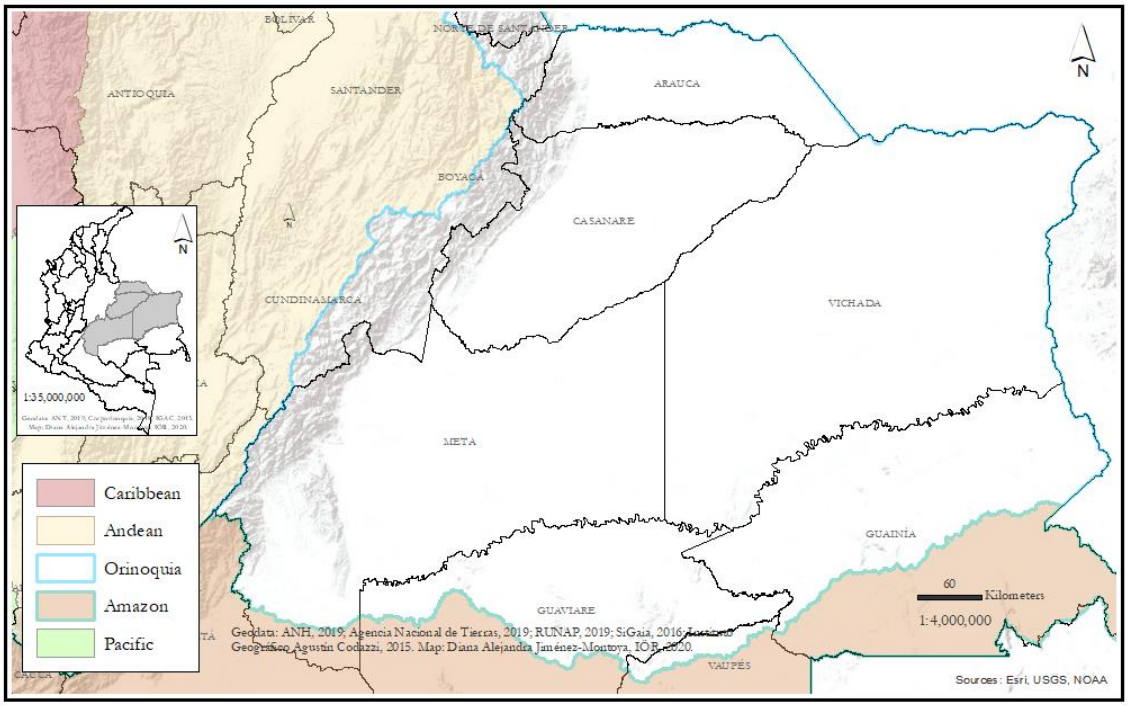
El Duya is found in *Orinoquia* region, also known as '*Llanos orientales'* or 'Eastern plains', which corresponds to the Colombian part of the Orinoco basin shared with Venezuela. These plains cover 991587 km^2, 35 % of which are found in Colombia[170] (Andrade Pérez et al. 2009). *Orinoquia* region corresponds to a biogeographical instead of an administrative unit, shown in Map 5. It is bounded by the Andean range to the West and the Orinoco river to the East, which flows south north. The north boundary is marked by Arauca River which flows west-east from Colombia to Venezuela and the southern boundary is marked by Guaviare River, which flows through a transitional ecosystem between the savannas and the Amazonian rainforest (Romero-Ruíz et al. 2012).

Most of *Orinoquia* region is part of the Savanna Biome, found between 200 and 1,200 m.a.s.l (Romero-Ruíz et al. 2012). Savannas are characterised by grass-dominated ecosystems with several types of wetlands, shrubs, isolated trees (Romero-Ruíz 2011) and gallery forests, a narrow strip of forest found next to rivers (Romero-Ruíz et al. 2010). Savannas are further characterised by strongly acidic soils (Romero-Ruíz 2011), with pH values between 3 and 5 (Lavelle et al. 2014) and low fertility, where dominant taxa are Entisols, Ultisols and Inceptisols (Romero-Ruíz 2011). Soils are also highly compacted, with an apparent density that ranges from 1,5 to 1,6 g cm^{-3} (Lavelle et al. 2014). These Savannas are heterogeneous and include several ecosystem types (Romero-Ruíz et al. 2010). 51 out of the 207 ecosystems identified for the region have been classified as transformed ecosystems, while the rest have been classified as natural (Correa et al. 2005; Andrade Pérez et al. 2009). On that ground, the region is

[170] About 347165 km^2

characterised also by high levels of biodiversity[171]. Moreover, ecosystems of this region are considered to function as corridors for species that move between the Amazon, Guiana and Andes regions (Romero-Ruíz et al. 2012).

Map 5. Location of *Orinoquia* region.



Source: author's own compilation. The blue line marks the boundaries of the Orinoco river basin, which encompasses all of savanna departments (Meta, Vichada, Casanare and Arauca) and part of Guainía and Guaviare.

The region contains 26 % of the water supply of Colombia[172] and the highest share of lentic water bodies of the country (IDEAM 2015).The region can be divided into two broad areas separated by Meta river: the high savannas (*altillanura*), found south of the river in Meta and Vichada departments, and the floodable savannas, found north of the river in Casanare and Arauca. While the *altillanura* has better water evacuation, floodable savannas remain covered by water for long periods. The rainfall pattern is mono modal, with maximum river flows between June and August, and minimum between January and March (IDEAM, 2015). The

[171] Researchers have reported 761 species of birds, 196 species of mammals, 4347 species of plants with flowers (Rangel 2014) and 1435 species of freshwater fishes (Rodríguez 2009, 24). Moreover, these kinds of savannas are considered among the most biodiverse on Earth (Murphy 2016, 9).
[172] 529469 Mm^3 (Millions of cubic meters)

climate corresponds to a wet seasonal tropical one[173] (Romero-Ruíz 2011), with average annual temperatures of 26 °C (Lavelle et al. 2014).

Orinoquia region has a low density, with 3,6 % of Colombia's total population[174]. Most of the population in this region is found in the Andes foothills, where there is better access to road networks and public services in contrast to the eastern part. Population density decreases from west to east, as well as economic activities. Agro-industrial activities are concentrated in the western part, where palm oil (*Elaeis guineensis*) and rice monocultures are dominant (Romero-Ruíz et al. 2012). Currently, other high intensity crops have been expanding such as soybean and maize for food production, as well as sugar cane for biofuel production (Lavelle et al. 2014, 106). Exotic forest plantations have spread throughout the region, with species such as *Acacia mangium*, *Eucaliptus pellita, E. tereticornis*, *Pinus caribaea*, *Hevea brasiliensis* and *Tectona grandis*, where the largest planted area is found in Vichada (Fedemaderas 2011). Some native species such as *Bursera simaruba* have also been promoted in the region, although not extensively. As well, the region is also characterised by its livestock production[175], despite having a density of less than one individual per hectare. However, hydrocarbons extraction is the main source of financial resources and has been the main driver for population growth since the decade of 1970 (Rausch 2009). Up to present day, the region is the largest hydrocarbons producer of the country; however, extraction is concentrated in Meta, Casanare and the western part of Arauca, while no extraction takes place in Vichada. Nevertheless, regional economy is also influenced by illegal activities, specially by drug traffic[176] and smuggling[177]. According to the last annual report issued by the Colombian government, *Coca* (*Erythroxylon coca*) cultivation for drug traffic can be found mainly in Vichada and Meta, predominantly in areas where the forest cover is

---

[173] Type Aw in the Köppen Climate Systems.

[174] According to the 2018 census data. See: http://geoportal.dane.gov.co/geovisores/sociedad/cnpv-2018/?lt=4.456007353293281&lg=-73.2781601239999&z=5

[175] In 2014, the region contributed with 21,9 % of the national bovine livestock (DANE, 2014a).

[176] Drug trafficking includes several stages and vary according to the product under commercialization. The monitoring is focused in Coca cultivation and the production of base, paste and cocaine hydrochloride. There still is not a systematic census of the cultivated area of Cannabis sativa in the country. See: Gobierno de Colombia. 2017. Monitoreo de territorios afectados por cultivos ilícitos 2016. UNODC. https://www.unodc.org/documents/colombia/2017/julio/CENSO_2017_WEB_baja.pdf. An estimate of cultivation in the department of Meta points to around 40ha (Téllez Mosquera 2016, 104). See: Téllez Mosquera, Jairo (Ed.). 2016. *Marihuana - cannabis. Aspectos toxicológicos, clínicos, sociales y potenciales usos terapéuticos.* Bogotá: Ministerio de Justicia y del Derecho. Dirección de Política de Drogas y Actividades Relacionadas. Observatorio de Drogas de Colombia. http://www.odc.gov.co/Portals/1/publicaciones/pdf/consumo/estudios/nacionales/CO03132015-marihuana-cannabis-aspectos-toxologicos-sociales-terapeuticos.pdf

[177] Comprehensive information about other illegal activities, such as biodiversity trafficking is difficult to find; nevertheless, there are reports about illegal ornamental freshwater fishes and timber commercialization.

denser, which correspond to the transitional forests between savannas and the amazon region. While coca base and paste production has been reported for the four departments, it is concentrated in Vichada and Meta. Smuggling activities are related to the region's border with Venezuela, from where fuel and livestock are smuggled, among other products. Despite the lack of available official data, press reports about seizures contribute to depict the magnitude of the situation[178]. Furthermore, low levels of agricultural productivity and high food prices promote the purchasing of smuggled products from Venezuela.

The region's ethnic composition is dominated by people with no ethnic ascription[179]. Nevertheless, a high number of Indigenous peoples dwell in this region such as the Hitnu, Piapoco, Sikuani, Amorúa, Piaroa, Uwa Betoye, Cuiva, Cubeo, Salia, Tsiripu, Masiguare, Yamalero, Jiw, Curripaco, Puinave and Achagua; some of which are also found in Venezuela and the Amazon region. Indigenous populations live mainly in rural areas inside r*esguardo;* however*,* some indigenous communities live in areas that have not been formalized as such. Indigenous peoples can be found also in urban areas, mainly those peoples coming from other regions, such as the Kichwa and Nasa people from the Andean region, who have established their governmental structures in the region. Finally, some indigenous population coming from Ecuador can be found in urban areas due to the commercialization of textiles.

6.1.1.1 Regional transformations

Part of the region has gone through great transformation due to activities related to hydrocarbons extraction and industrial agriculture. These activities have attracted migration and have fostered the improvement of infrastructure (roads, communications), along with the invigoration of local economies. Nevertheless, these changes have caused several social and ecological impacts. By 1987, 90 % of the region had a natural cover of savannas. 20 years later it had diminished to 77 % due to the increase of palm oil plantations, mainly in the Andes foothills (Romero-Ruiz et al. 2012). Environmental impacts include habitat loss for savannas species, biodiversity loss of native grass species, as well as increased hunting and fishing performed by plantations' employees. Moreover, wetland dynamics disruption is an extended

[178] News reports that illustrate it can be found in these links: http://www.portafolio.co/economia/capturados-contrabandistas-de-ganado-proveniente-de-venezuela-508004; https://www.octavadivision.mil.co/index.php?idcategoria=418922

[179] Arauca (2,74 % Indigenous; 4,2 % Afro descendant); Casanare (2,65 % Indigenous; 1,61 % Afro descendant); Meta (2,23 % Indigenous, 0,96 % Afro descendant); Vichada (58,16 % Indigenous, 0,76 % Afro descendant). Rom population makes less than 0,01 %, according to the 2018 census data.

impact caused both hydrocarbons and oil plantations, such as roads construction and drainage systems implementation. Further impacts are related to increasing water demand, water pollution due to fertilizers and pesticides runoff, non-treated wastewater disposal produced in campsites and oil spills; as well as microclimates' disruption due to changes in natural covers. Moreover, impacts related to violence and forced displacement[180] have been associated with palm oil plantations as well as hydrocarbons extraction, where the latter has been especially serious in Arauca (Rausch 2009).

Unlike other regions, there are no Forest reserves that constrain land use change. Furthermore, the grasslands that constitute the natural cover of the savannas are perceived as empty underused spaces that need to be turned into productive areas. Moreover, despite the predominance of grasslands, gallery and transitional forests are subject of clearance. According to a study for the decade 2001-2010, one of the areas with the greatest loss of woody vegetation was in *Orinoquia* region, where *'the construction of the Villanueva-Yopal road and the road infrastructure to aid oil exploration has stimulated the expansion of trading, cattle, and agriculture'* (Sánchez-Cuervo et al. 2012, 7). The loss of forest cover has continued in this region and deforestation hotspots are found in the transition between the savannas and the amazon region (IDEAM 2017).

Land-use change has been discussed as having positive impacts on savanna ecosystems due to the protection of organic matter from erosion and the addition to soil and nutrient supply provided by crops (Lavelle 2014). Further positive impacts include avoidance of CO_2 emissions by means of reducing areas of grass burning for cattle, CO_2 fixation through biomass production and CO_2 emissions reduction because of the use of biofuel crops. Moreover, oil palm plantations have the potential to support communities of equal or higher biodiversity value than cattle pastures (Gilroy et al. 2015). However, this approach fails to recognise the importance of savanna ecosystems. As well, it oversees that high scale agricultural production in the savannas is hindered by the poor soil quality in the region. Moreover, '*the very low initial quality of soils in the Llanos makes them particularly susceptible to erosion and biodiversity loss'* (Lavelle et al. 2014, 107). As well, soils are '*fragile, susceptible to compactation (…) they present low infiltration and low water storage capacity'* (Rivera et al. 2013, 3), which affects the volume of surface runoff and flooding dynamics, as well as '*the transfer of nutrients'* (Lavelle et al. 2014, 116) from applied fertilizers to aquatic ecosystems.

[180] The better documented case in the region is that of Poligrow LTDA in Meta (Van Dorp et al. 2015, 69).

These traits partially explain why extensive cattle ranching continues to be the main agricultural activity in the region. Cattle was first introduced by the Jesuits in the 16th century (Gómez et al. 2012) and has been kept in extensive systems ever since. This type of Cattle ranching allows for the roaming of livestock in the savannas, grazing freely and with very little management. Furthermore, this type of ranching is based on the burning of native grasses to provide regrowth forage for the cattle (Romero-Ruíz et al., 2010), which destroys organic matter and exposes the soil to wind and water erosion. Other impacts of extensive ranching are soil compactation and erosion. Moreover, Meta, Vichada, Casanare and Arauca departments exhibit low and moderate levels of desertification (IGAC and IDEAM 2010) and constitute the largest area of the country under desertification process (p. 125). Notwithstanding these limitations, national governments have developed policies[181] to promote land use changes in the region, mainly through incentives provided for forest plantations and oil palm, aiming at the reproduction of the model of the '*cerrado*'[182]. *Orinoquia* region had 67868 ha of commercial forest plantations in 2015, mostly *Acacia mangium* (34 %), *Pinus* spp. (27 %) and *Eucaliptus* spp. (21 %) (PROFOR, 2017). Furthermore, it is estimated to have the highest potential to increase forest plantations areas (p. 147)[183]. However, the growth of these plantations has not been sustained. Currently, a new project is under implementation whose objective is *'to improve enabling conditions for sustainable and low-carbon landscape planning and management in Project Targeted Areas'* (WB, 2018, p. i) funded by the Biocarbon technical assistance trust fund.

6.1.1.2 Land in *Orinoquia* region

The absence of a regional cadastre which keeps the authorities from knowing the real extent of land available for titling (DNP 2014). Furthermore, land grabbing processes in the Altillanura have been documented (OXFAM 2014; CGR 2014), which consist of illegal

[181] The interest in turning the savannas into economically productive ecosystems could be traced back to the 1970s. However, a renewed promotion of forestation with foreign species began as of the decade of 2000, when the national government made policy changes for commercial forest plantations. First, a tax reduction for the sector was included in the national development plan (2002). Then, the formulation of the 'Policy to promote commercial reforestation' (Conpes 3237/2003), led to an intensification of the financial incentives for new plantations. Subsequent national governments have improved incentives. See: Departamento Nacional de Planeación (DNP). 2003. CONPES 3237 de 2003. Política de Estímulo a la Reforestación Comercial en Colombia 2003-2006.

[182] An area with similar soil fertility conditions in Brazil. The plans have included the promotion of CO_2 fixation through forest plantations, the granting of commercial forestry related incentives, as well as its promotion as the next agricultural enclave.

[183] The competitivity agreement for the forestry sector of 2004 led to the growth of plantations. In 1998, 10000 ha had been planted in Vichada and 2000 ha in Casanare, 11400 of which corresponded to *P. caribaea* and the rest to *Eucaliptus* spp. *Hevea* sp. plantations in Meta were of 308 ha (Roncancio Guerrero et al. 1998).

acquisition and concentration of *baldíos*[184] resulting in unusually large-sized plots[185]. Land concentration is related to speculation with land prices (Duarte Torres, 2016) and has a direct impact over Indigenous peoples' aspirations over territorial control.

Baldíos are one of the crucial elements of the agrarian chapter of the peace accord signed with the armed group FARC in 2016[186]. The accord stablishes that there will be an update of the rural cadastre and the rural property taxation. As well, it stablishes that a national 'Land Fund' will be created as part of an 'Integral rural reform'. The Fund is intended to foster the redistribution of land among farmers without land or with not enough area. It is estimated to reach 3 million hectares during the first 12 years of its operation. Nevertheless, while some of these lands correspond to areas that have been illegally acquired or underused, a significant part corresponds to *baldíos*. Therefore, the very concept of the *baldíos* as 'land without owner' or Colombian national land is at the centre of Indigenous peoples' territorial claims, because most of those lands correspond to their traditional or ancestral territory. In this regard, the conceptualisation of *Orinoquia* region as empty (not populated), underused (without productive covers), and ownerless (*baldío)*; make the case for the use of the concept of frontier.

6.1.1.3 The region as a frontier

Dynamics during the colonial period led to the marginalization of some territories, which have been considered as internal enemies as they constituted '*resistance fronts of combative indigenous "savages", former black slaves and poor colonizers'* (Serje de la Ossa 2006, 22). Such marginalization has shaped the way in which *Orinoquia*, and similar regions have been developing in the last five centuries, where the emergence of the State-Nation in the 19th century deepened the divide with these regions. To illustrate this argument, it should be kept in mind how the progression of settlements' foundation was in what now is Colombia.

---

[184] According to article 671 of the Civil code of Colombia, *baldíos* are '*all those lands situated within the territorial limits (of Colombia) which have no other owner'*. According to the constitutional court, *baldíos* are public assets of the nation, under the category of allocable fiscal assets, on the grounds that the nation keeps them to award them to those who meet all the requirements established by the law. They are not subject of prescription and cannot be seized. See ruling C-595/95.

[185] Law 135 (1961) introduced the concept of Family agrarian unit (UAF), which considers the determinant factors of small farming and defines how much area does a family need to live in decent conditions. It was created to promote equal distribution of lands among farmers and with law 160 (1994), the UAFs were used for determining the area that could be given to a family. UAFs in *Orinoquia* region are larger than in the rest of the country because of the low fertility of soils and other factors that limit productivity, which has led to define UAFs that can reach 1725 ha (Duarte Torres 2016).

[186] The first section of the agreement, '*Towards a new rural Colombia: Integral rural reform'* was the first topic of discussion in peace negotiations and addresses the agrarian issues that many have identified as one of the main causes of the armed conflict in Colombia (CHCV 2015).

The first permanent settlement occurred in 1525 with the foundation of Santa Marta in the Caribbean coast, which according to Zambrano and Bernard (1993) was *'the first geographical land allocation of the colonial administration'* (p. 25). Among the current municipalities in Colombia, 93 were founded between 1525 and 1550, mostly in the Caribbean and Andean regions (p. 38); then in the 17th century 98 settlements were established, mainly in the eastern mountain range (Andean region) and 264 of the current municipalities were founded during the following century (p. 52). Consequently, the historical pattern of territorial occupation led to the concentration of the population in the Andean and Caribbean regions (Etter, McAlpine and Possing, 2008) and left *Orinoquia* region as a *'largely abandoned frontier'* (Rausch 2009, 113) for more than 150 years, in which Indigenous peoples continued to dwell despite the presence of catholic missions.

As the economic and political power progressively concentrated in the urban Colombia, frontier regions developed in differentiated ways according to their traits but with a common characteristic: the continued extraction of natural resources since the late 19th century until present. The multiple waves of extraction can be traced back to the extraction of Rubber in the Amazon (Ullán de la Rosa, 2004) and timber in the Pacific region (Asher and Ojeda, 2009; Leal León and Restrepo Uribe 2003; Rodríguez Cuadros 2015). In *Orinoquia*, extraction of feathers was significant and reduced populations of *Casmerodius albus egretta*[187] and *Egretta thula* (Franco García 1997; Martínez Orozco 2012, 61). Furthermore, the commercialization of *Crocodylus intermedius* skin almost led to their extinction (Casal et al. 2013). As of the second part of the 20th century, extractive activities continued in *Orinoquia* region mainly regarding the commercialization of reptile and feline skins on what was known as '*Tigrilladas'* (Payán and Trujillo 2006) and the extraction of hydrocarbons; while in the Pacific and Amazon regions extraction expanded to also include illegal gold mining (Massé and McDermot 2017).

Some of these activities developed in close association with violence and illegal activities[188]. With the consolidation of armed conflict in the decade of 1960 and the emergence of drug traffic in the following decades, extractive activities became progressively more connected to

[187] Currently known as *Ardea alba.*

[188] During the first part of the 20th rubber extraction was based on the slavery of Indigenous peoples of the *Orinoquia* and Amazon regions. See the report of the Centre of historic memory: *Putumayo: la vorágine de las caucherías. Memoria y testimonio Primera parte*. http://www.centrodememoriahistorica.gov.co/informes/informes-2014/putumayo-la-voragine-de-las-caucherias

illegal and violent actors[189]. Therefore, these regions have been subject of iterative plundering, which partially explains that they currently hold high poverty levels and lack of health and education services. Serje de la Ossa (2006) argues that these phenomena are not produced by the absence of the State, since '*local groups in those territories that seem to escape the national rule are, in fact, the State'* (p. 23). The author further argues that '*the State has been embodied by groups that descend from the criollos, that is, the illustrated, modern, urban and preferably Andean elites. Their imagination embodies everything that is supposed to be the Nation and defines what constitutes its antonym - the no - Nation that must be subdued'* (p. 23). In this regard, Carrizosa Umaña (2014) affirms that Colombians have imagined the country through ideas that are *'even opposite to the complexity of the biophysic environment'* (p. 19)[190].

Based on the work of Serje de la Ossa (2006), it can be argued that the configuration of *Orinoquia* region as a frontier results from the interaction between the socio-historic development of the Colombian State and the presence of particular ecosystem features, such as biodiverse ecosystems as well as the presence of indigenous and black populations, deemed as the antonym of the Nation. Thus, the representation of frontier regions is based on opposite images of richness and opportunity versus risk and danger, imagined as '*loaded with natural and mining resources, although populated by dangerous primitive groups and menacing rebels'* (Serje de la Ossa 2006, 23). The notion of frontier is then based on the imagination of a boundary between opposite conditions: inhabited versus empty, civilized versus savage, urban versus rural, advanced versus lagged, light-skinned versus dark-skinned, which sustains the long-lasting divide between the inland and the frontier regions in Colombia. Furthermore, the conceptualisation of a region as a frontier is used to foster its transformation, in order to 'civilize' it. In the Colombian case, this is inextricably linked to the notion *baldíos* of the Nation.

The areas classified as *baldío* were, in many cases, lands controlled by Indigenous peoples who would not occupy those lands in a permanent way, or lands that were occupied by Indigenous peoples, but over which they had no property title or both situations. In any case, indigenous ways to control lands were not recognised as valid in the politics fostered by the national

---

[189] The links between extractive activities and violence are discussed by Ortiz-Riomalo and Rettberg (2018): gold mining (https://dx.doi.org/10.7440/colombiaint93.2018.02); Molano Bravo (2016): armed conflict (http://www.altocomisionadoparalapaz.gov.co/mesadeconversaciones/PDF/una-lectura-multiple-y-pluralista-de-la-historia-1447178719-1460381905.pdf) and Gaitán et al. (2011): extractive industries (http://www.eisourcebook.org/cms/Colombia,%20RWI%20Extractive%20Industries%20report.pdf)

[190] This author suggests that current difficulties in the exercise of territorial authority can be traced back to the precolonial period and that obstacles placed by environmental conditions would hinder the incorporation of these territories into the colonial governed space, leading later to territorial disparity. See the work of Herrera Ángel (2006) for a detailed discussion about prehispanic and colonial territorial configurations. http://www.scielo.org.co/pdf/rhc/n32/n32a06.pdf

governments, ever since the republic was created. This is related to the specificity of the notion of land property, which is not shared by Indigenous peoples and is further explained in relation to the Salia people.

According to LeGrand (1988, p. 26), there were two trends in the formulation of policies about *baldíos* in Colombia: the promotion of rural economic growth and colonization (by non-land holders known as *'colonos')* and the aim of generating income for Colombian State (p. 33). Therefore, the policies about *baldíos* fostered the colonization of those areas that had not been yet incorporated to the set of private property already consolidating in the Andean and Caribbean region. However, with the enactment of law 100 in 1944 and the upsurge of the violence produced by the confrontation between political parties as of 1948, thousands of peoples were forcibly displaced to lower lands for colonization (Pérez Martínez 2004). Those lower lands correspond to the areas of the Pacific, Amazon and *Orinoquia* regions, in which the Colombian government promoted further colonization instead of performing a redistribution of the lands that were located close to urban hubs, markets and service offer (Fajardo Montaña 2008).

Currently, *Orinoquia* region is managed as a frontier, not only in terms of resource extraction, but also in terms of the land that could be appropriated and speculated with in the real-estate market (OXFAM 2014; Duarte Torres 2016). In this context, indigenous territorial claims over land control and natural resources use oppose the notion of frontier itself.

6.1.1.4 Armed conflict

Despite the constitutional entrenchment of indigenous and environmental rights protection, the particular frame imposed by armed conflict in Colombia has also influenced region's development. The municipality of Orocué has been the scenario of several violent events in the last two decades, mainly related to the operation of paramilitary groups in the area. The emergence of paramilitaries in the department of Casanare goes back to the decade of 1980, but the highest peaks of violence took place between 1991 and 1996, when these groups consolidated their domain and fought the attempts for territorial control of *Guerrillas* such as FARC-EP and ELN (MOE and CNAI n.d.). Violent events continued and by 1997, the '*autodefensas campesinas del Casanare'* (ACC) had prevailed as the dominant paramilitary group (MOE and CNAI n.d., 6); however, between 2003 and 2004, another group known as '*bloque centauros'* disputed the territory with the ACC, which led to the escalation of violence in the

department (Verdadabierta.com, 2009). The demobilisations of 2002 and 2005 resulted in the dismantling of two out of three paramilitary groups in Casanare (UNAL 2012); while, the ACC continued their activities in a marginal way (CNMH 2015). Besides ACC, other groups have emerged such as *'águilas negras', lLos carranceros', 'renacer de los buitragueños', lLos rastrojos', 'libertadores del Vichada', 'bloque Meta'* or *'los puntilleros'* (Huber and Villamizar 2018, 6).

Violent actions in Casanare can be dated back to the decade of 1970, before the oil extraction started; however, MOE and CNAI (n.d.) affirm that oil extraction fostered an increase in the conflict, not only because of the arrival of larger numbers of effectives to incorporate themselves in armed groups, resulting in the increase of military actions, but also because a large quantity of people marginalised from oil revenues was recruited by these groups. The authors also mention that some groups started to extort oil producers, which was tackled through paying other armed groups to provide security for oil extraction activities (p. 7).

6.1.2 External governance systems

El Duya is embedded in the municipality of Orocué and is located in its rural area; therefore, at least three governance systems need to be considered: the rural organisations, the municipality and the department. Rural areas in Colombia are usually divided into '*veredas'* with a communal organisational structure known as JAC[191]. This structure is defined by as *'civil, social and communal organisation for social management, which are non-profit, (…) formed voluntarily by residents of a place who join efforts and resources to promote an integral, sustainable based on the exercise of participative democracy'*[192]. Each JAC develops its activities within a bounded territory and there can be only one JAC per *vereda*; although exceptions are made whenever the area is too large. *El Duya* is surrounded by the *veredas Miralindo*, *La Unión-Tujúa*, *La Esmeralda*, *La Virgen* and *La Independencia*. The government of the *resguardo* sometimes interact with the neighbouring JACs, for example, for coordinating communal works such as the maintenance of a common road. Nevertheless, oil extraction-related activities have fostered the emergence of conflicts between the inhabitants of the rural area[193], which emerge whenever oil companies offer some kind of benefit (money, goods or services). These are delivered according to the effects over communities that are identified in the environmental impact assessment. Normally, impact

[191] These organisations were regulated as of 1958 and continue to be the common organisational structure in rural areas.
[192] Art. 8. Law 743 (2002)
[193] Fieldwork diary: May 18, 2018.

assessment over communities is based on administrative units. However, the boundaries of the *veredas* in the rural areas in Orocué are poorly demarcated by the territorial plan, which constitutes a loophole through which some rural landowners try to annex their property to the neighbouring *vereda* if benefits are offered there.

Orocué covers an area of 4177,7 km^2, most of which corresponds to its rural area is divided in 25 *veredas* and eight *resguardos*. 1,7 km^2 of which correspond to the urban area (DNP et al. 2017, 148). The population of Orocué is of 8142[194] inhabitants, 48,6 % of which are women. The location of the municipality over Meta river is attractive for the traffic of illegal goods of all sorts, including drugs and firearms, which move towards and from Venezuela and Brazil. Until 2011, most of the municipal budget was obtained through oil production royalties and produced 9,6 % of the total oil production of Casanare in 2016[195] (Martínez Delgado and Delgado Barrera 2017). Moreover, its gross domestic product per capita in 2011 was five times above the national average. Between 1996 and 2015, oil royalties reached 52 % of the total income of the municipality (Martínez Delgado and Delgado Barrera, 2017). However, regulations about royalties' distribution were changed and municipalities can no longer receive royalties directly. Currently, the income of the municipality relies more on national budget resources.

Concerning the department level, it provides guidelines to integrate '*the spatial projection of department, municipalities and indigenous territorial entities' sectorial plans'* (law 1454 (2011), art. 29) and administer resources which municipalities and indigenous territories try to get hold of. Among the resources invested by the department, the houses built in 2002 represent a milestone for the *resguardo*. Additionally, the government of Casanare has invested in the implementation of water treatment systems and school-related infrastructure. The traditional Salia authorities association of Orocué (ASAISOC), formulates projects to compete for funding, which are evaluated by public officers according to the quality of the project and the availability of budget.

[194] According to DANE, 2018.
[195] According to Martinez Ortiz and Delgado Barrera (2017), an oil production peak occurred in 2013 with an average of 32000 oil barrels per day (*p.* 138).

6.2 Resource systems

This section includes a description of the variables that characterise the ecosystems and infrastructure of *El Duya*. The biophysical elements of the social-ecological system are described based on the observations made during fieldwork and the information found in secondary sources. Some of the second-tier variables have been analysed together because of the similarities between them.

6.2.1 Sector; clarity of systems' boundaries; size of resource system; location.

El Duya was demarcated between the basins of *Caño Duya* and *Caño Pírito*, which flow towards *Meta* river, a direct tributary of Orinoco river. This area corresponds to what the land-use plan of the municipality considers as rural and is formed by alluvial fans, with a gentle slope, produced by the multiple drainages flowing down from the eastern Andean range (SGC 2014, 40). It covers an area of 117,85 km^2 which includes grasslands, gallery forests, wetlands and some human-constructed infrastructure. The predominant ecosystems are floodable savannas, which can hold layers of water between 30 and 100 cm during the rainy season and exhibit variable types of vegetation (Garavito-Fonseca et al. 2011, 63). Therefore, flooded savannas become seasonal wetlands, while the areas with a marked concavity constitute permanent wetlands, which is the case of '*esteros*'.

According to the inventories made by the Salia people, at least 17 '*esteros*' can be found in this *resguardo* (Pueblo Salia 2012a, 114; Pueblo Salia 2012b, 41). Other permanent wetlands correspond to bodies of water that drain the area, like '*quebradas*' and '*caños*'. In *El Duya*, all of the waterways spring in the savanna in places called '*nacederos*', which usually have a slightly concave form and a high-water table. Some of these '*nacederos*' coincide with the presence of vegetation but sometimes they correspond to an upwelling in the open savanna. The most important stream is *Caño Duya*, which flows in direction west-north east and constitutes the norther boundary of the *resguardo San Juanito*. Other streams are tributaries of *Caño Duya*, such as *Caño Tujúa*, *Caño Cañijirriba* and *Caño Ocumo* and constitute the main spatial reference points of the *resguardo*. Finally, another type of wetland corresponds to lagoons, which are a lentic body, frequently connected to a stream nearby that is sometimes surrounded by vegetation, which also constitute reference points.

Gallery forests are a distinctive feature, along with vegetation characterised by severe soil flooding alternating with soil drought (Garavito-Fonseca et al. 2011, 62). The dynamics of these ecosystems are strongly defined by seasonality, which is characterised by a rainy season between April and November, and a dry season between December and March. The dry season presents a drastic decrease of rainfall and an increase in the occurrence of fires. Researchers have found that wetlands, savannas and forests in the area are highly biodiverse (Ariza Ramírez and Baptiste Ballera 2011; Baptiste Ballera et al. 2011 Naranjo Arcila 2011).

6.2.2 Human constructed facilities

These facilities correspond to infrastructure found in *El Duya* that can be accessed by all of its dwellers: transport, education and sports facilities, as well as water supply, sewage and energy provision. Houses are not discussed in this section.

6.2.2.1 Transport Infrastructure

The *resguardo* has a network of unpaved roads, two of which are frequently used by outsiders. One of these roads connects the urban area of Orocué with the administrative capital city of the department, Yopal. This road[196] has 92,1 km of length, 22,6 km of which have pavement in good conditions (Gobernación del Casanare 2010, 117). Vehicles circulating through this road include public transport buses and trucks, which transport all kinds of products towards and from Orocué. The other road connects the *resguardo El Duya* with the Guanapalo river. It constitutes a key road for crude oil transport extracted from the pits located nearby. This road is used by the inhabitants of the neighbouring areas, including the *resguardos 'El Suspiro'* and '*El Médano'* to go to the urban area of Orocué or Yopal through '*La nevera-Orocué'* road. Two large bridges have been built over *Caño Duya* and over *Caño Tujúa*, which are used for the circulation of heavy weight vehicles. A third bridge was built over *Caño Duya* which allows the communication between *Cururital* to *Piñalito*, which is built for light vehicles and is barely used by outsiders. Other roads can be used almost all year long to go from *Piñalito* to the sector of *La Unión-Tujúa* or to reach *Cururital* from Orocué without passing near *Piñalito*. Smaller roads

[196] This road is denominated '*Marginal (La nevera)-Orocué (Sector San Rafael de Guanapalo-Orocué)*' and is considered a Second order road according to the valid national categorization.

produced by the constant circulation of motorcycles are used during the dry season exclusively and usually lack of maintenance.

6.2.2.2 Education and sports facilities

Cucurital and *Piñalito* hold educational and sports infrastructure, but the ones built in the latter are larger. *Cucurital* has a school, which offers primary education and has a football courtyard. The school in *Piñalito* offers primary and secondary education and is also a boarding school. Students from all *resguardos* and even non-indigenous students can study there. Moreover, it sometimes offers higher qualification opportunities, such as courses offered by the national learning service (SENA). A communal sports infrastructure is located in *Piñalito*, where several sports can be practiced (basketball, volleyball, indoor football). This area is also used for other activities, such as a festival held by the end of the rainy season. As well, an area for a rodeo-like activity called '*coleo*', which consists of a rectangle of 150 m long and about 10 m wide built with tubes is found nearby.

Other facilities located in *Piñalito* include a communal meeting room, an area for the storage of agricultural equipment, an office and a house for the *cabildo*[197]. A house-like building called 'health centre' is also located in *Piñalito*; however, it is currently used as a house. Additionally, there is large communal grocery store[198] which is managed by the women's organisation.

6.2.2.3 Water supply and sewage

Currently there are 132 houses in the *resguardo El Duya*, but 32 of them are not inhabited[199].Most of the houses are supplied with water obtained in a well. The houses located in *Piñalito* are connected to a centralised water supply system, which consists of water pumped into an elevated tank, from where it is distributed twice a day. Once in the tank, chlorine is added before distribution[200], while the pumping is based on electricity. Houses located far from

---

[197] The law 2164 (1995) defines cabildo as '*a public special entity, whose partakers are members of an indigenous community, chosen and recognised by the latter, with a traditional social-political organisation, whose function is to legally represent the community, exert authority and carry out activities conferred by the law, their customary practices and the internal regulation of each community*' (art. 2).

[198] Another store was built in *Cucurital*, which is currently not fulfilling its original purpose. According to the interviewees, there were organisational problems that led to shutting the store down.

[199] Fieldwork diary: May 9, 2018.

[200] According to the health authorities of the department, water quality poses risk if consumed directly from the tap. Interviewed officers informed about the malfunctioning of the water treatment system. Consequently, a petition was filed to the relevant health authority (*Secretaría de salud de Casanare*) in order to obtain the results of the analysis. These correspond to samples taken in 2018 and confirm the presence of total coliforms.

Piñalito are not connected to this supply system. Most of these have household level solutions, which consist of pumping from a well into coke tray aerators. Nevertheless, none of these systems is being used and the water is consumed without treatment.

Sewage disposal is made through household septic tanks. Currently, most houses are connected to one of these systems. If newly built houses are close enough to an existing tank, they connect their sewage to the tanks through pipelines. In contrast, the houses located far from an existing tank lack of appropriate sewage disposal. The connection of new houses to existing tanks increases the frequency with which these systems require maintenance.

6.2.2.4 Electricity and gas

Since 2013, the *resguardo El Duya* is supplied with household gas, originating in the station '*Sardinas'* [201]. Most of the houses in the *resguardo* have access to this service, except for newly built. Electricity is supplied for each household. This is available since 2011, because a medium voltage (34,5 kv) grid was installed to connect the urban area of Orocué through a grid coming from the municipality of San Luis de Palenque towards the substation *Sardinas*. Each household is required to pay a fixed monthly fee, regardless of the amount effectively consumed. Only two households were reported as lacking connection to these services. Other energy sources are firewood, used mainly for cooking the traditional Salia foods derived from Manihot; as well as gasoline for operating generators.

As of 2016, the *resguardo* has access to second-generation cellular technology after the construction of an antenna in the sector of *Piñalito*. With the availability of electricity as of 2011, many Salias have had access to satellite television, while the antenna has allowed that inhabitants of *El Duya* can have limited access to internet.

6.2.3 Equilibrium properties (stable state).

Available knowledge about the Savannas in *Orinoquia* region indicates that *'fires occur in a dry season between December and early April. Besides climate, land management practices are a major factor determining soil and vegetation characteristics'* (Romero-Ruiz et al. 2010, 2014). Moreover, the spatial

[201] This corresponds to the main station of the block *Garcero*-C, located in the *vereda Miralindo* in Orocué. It has 10 producing wells, 12 temporarily closed pits, 3 injection wells and one abandoned well (ANLA 2018, 3)

pattern of fires is '*associated to pastures*' (Armenteras-Pascual et al. 2011, 281); therefore, some authors affirm that, in absence of fire and logging, forests *'tend to invade or recover savanna spaces'* (Molano Barrero 1998, 28). Regional trends in the last decades have fostered changes in *'fire regimes, hydrology and nutrient cycles including the capture and emission of greenhouse gasses'* (Romero-Ruiz et al. 2010, 2014).

6.2.4 Predictability of system dynamics

Salia knowledge of ecosystems involves a detailed understanding of their dynamics, which are heavily influenced by the climate regime. However, the people of *El Duya* report changes in the climate regime and growing difficulties in predicting how the system will manifest its regular features, which are especially important for planning agricultural activities. According to the regional climate change plan for *Orinoquia* (PRICCO), in the climate change scenario RCP 4,5 the annual temperatures are expected to increase 1,40 ºC and 1,17 ºC, maximum and minimum respectively, mainly in the municipalities of Orocué, Aguazul and Tauramena (CIAT et al. 2018, 13). Total precipitation is expected to increase; although fluctuations in its temporal concentration are also expected. The largest increase is expected for three municipalities: Orocué, Trinidad and San Luis de Palenque (p. 13). Two of the impacts expected in this scenario would be crucial for the people of *El Duya:* biodiversity loss and cattle mortality due to heat stress, considering that they rely heavily on biodiversity for nourishment and on cattle for obtaining cash and additional protein sources.

In addition to these factors, the people of this *resguardo* describe a persistent trend of cultural change that produces uncertainty about the future, considering that some of the younger people of *El Duya* are migrating to urban areas and customary practices seem to be declining. This is discussed in detail in chapter 7.

6.3 Actors

The relevant actors in *El Duya* correspond to persons who self-identify as part of the Salia people. However, the relationship with non-indigenous actors is also discussed in this section, mainly those outside the *resguardo*. This section addresses six second-tier variables among those proposed in the social-ecological systems framework, clustering some of them because of their

affinity. The variable 'History' (past experiences); in contrast, is described with more detail in order to identify key information to understand the evolution of indigenous institutions.

6.3.1 History or past experiences

According to Morey and Morey (1980), there is limited information about the history of the Salia people. Therefore, most of what is known about Salias during colonial times corresponds to the information produced with regard to the Jesuit missions in the Orinoco basin. According to this limited knowledge, the mobility and spatial distribution of the Salia people were heavily affected by the arrival of Europeans, which later led to the location of most of the Salia people in what today is Orocué. The following section provides an account of the historical developments that resulted in the demarcation and titling of the *resguardo El Duya*.

6.3.1.1 The colonial times

According to Salia documents, the Salias come from the Margarita island in the Caribbean (Pueblo Salia 2005) and they are descendants of the Salia nation of *Barraguán* (Pueblo Salia 2012), which according to corresponds to the section of the Orinoco river that covers an area from the '*Cerro Barraguán'* to the mouth of Guaviare river (Caulín Martínez 1779). Morey and Morey (1980) affirm that Salias were displaced from the Orinoco river during the 18th century and that the Salias started to move to the Meta region '*around 1730, when the Caribs reinvigorated their attacks'* (p. 254). The Salias of Orocué state that they come '*from a territory that is known today as Venezuela*' (Pueblo Salia 2017, 12). They explain their movement from the Orinoco river to Orocué as a result of their regular mobility as sailors (Pueblo Salia 2012) and as a migratory flow from Venezuela (Franco García 1997; Pueblo Salia 2005). On this regard, Morey and Morey argue that Salias '*can be considered basically as dwellers of the plains'* (p. 259).

According to Salia elders, their people migrated to what now is Orocué guided by a Salia man named Tonty Florentino[202], who was in contact with the Jesuits of the missions installed in this area. Furthermore, they say that this man helped them to take possession of an area that is currently called the ancestral territory and can be observed in Map 8. The priest José Cavarte founded the mission *San Francisco Regis de Guanapalo* between 1721 and 1728 (Franco García 1997), while the mission of *San Miguel de Macuco* was built in 1725 (Morey and Morey 1980,

[202] Called Chepe Cavarte in the book of Franco García (1997).

248) by the Salias and the priest Manuel Román (Franco García 1997, 41). Currently, the ruins of *San Miguel de Macuco's* are in the *resguardo El Consejo*, in an area located between *Caño San Miguel* and *Caño El Consejo (Macuquito*).

According to Gómez López et al. (2012); once the Jesuits where expelled in 1767, some of their missions were passed to the Dominicans (p. 83). However, Garzón Rodríguez et al. (2011) as well as Franco García (1997), indicate that the Jesuits in Orocué were replaced by the order of the Augustinians. With the departure of the Jesuits, the herds of cattle and horses that they introduced were left without care. This fostered the reproduction, roaming and spreading throughout the savannas, resulting in large numbers of roaming cattle, which survived the looting of the first half of the 19th century, during the years of independence wars (Gómez López et al. 2012, 85). This created the initial conditions for the current extensive livestock production in Orocué and has had a long-lasting impact over Salia occupation of the territory, which has been strongly related to cattle ranching ever since.

6.3.1.2 The early republic and the Salias

According to Franco García (1997), the creation of the settlement of Orocué in 1858 is the outcome of a process initiated by the Salia people (p. 69). According to this author, non-indigenous inhabitants, such as merchants, owners of *hatos* and landless colonizers (*colonos*), arrived to Salias' dwellings from Venezuela, to the east, and from Sogamoso, to the west, around the middle of the 19th century. By 1863, a customs office was operating in Orocué and there was already river traffic through Meta river towards Venezuela (Franco García 1997). With the progressive arrival of newcomers, indigenous Salia and Piapoco families were displaced from the areas in which they had installed themselves (Pueblo Salia 2005), including the settlement of Orocué. By the beginning of the decade of 1890, the Augustinians established a missionary settlement known as *San Juanito* (Franco García 1997); nevertheless, the mission '*San Juanito'* was burned down in 1899 and many Salias fled because of violence at the time (Franco García 1997). Further information about other settlements with Salia population was not found in this research[203].

By the beginning of the 20th century, while the Andean and Caribbean regions of Colombia where going through industrialization and urbanisation processes; *Orinoquia* region was

[203] Rivera Coba (2013) affirms that *San Juanito* or *Tagaste* was founded in 1891 and was located in the right riverbank of *Meta*, 15 km direction west from Orocué (p. 44). He also mentions another mission, '*Barrancopelado'* in the bank of *Meta* river, as well as the Salia '*Pueblo de indios'* (Rivera Coba 2013, 44).

predominantly rural. Moreover, cattle roamed in fenceless savannas and the land market was poorly developed. On this regard, Gómez López et al. (2012), affirm that the idea of private property over the savannas was alien to the region until the end of the 19th century (p. 88), when fencing started to be fostered by foreigners, which was related to *'land appropriation and speculation'* (p. 89). The growing presence of foreigners in the region led to further displacement of the Salia people. Rivero et al. (1980) argue that there was a site called *Cafifi*, located in the mouth of *Caño Muniquipare* over *Pauto* River, from which Salia families were forcibly displaced. According to this author, the families installed themselves in a site called *La Charanga* between 1916 and 1917, a place that was also inhabited by non-indigenous merchants and missionaries. Nevertheless, further violence perpetrated by bandits known as '*La Humbertera',* as well as non-indigenous neighbours, caused forced displacement (p. 288).

Further immigration to Orocué occurred as the port over Meta river gained importance[204]; nevertheless, trading declined with the first world war (García Bustamante, 2003). Other source of migrants originated in Venezuela (Martínez Orozco 2008) due to its conflictive internal political situation at the beginning of the 20th century (Ramírez Silva and Vidal 2003, 4). Nevertheless, some of this population later moved out from Orocué (Martínez Orozco 2008). Along with the migratory waves from Venezuela, people from other regions of Colombia also migrated to *Orinoquia* region due to conflicts over land distribution and forced displacement, produced by the persistent violence between members of the two political parties of the time ('*liberales'* and '*conservadores')*. In Orocué, this violent period led to the forced displacement of Salia families (Pueblo Salia 2005, 45). Armed confrontations between members of the two parties also took place in what today is *El Duya*[205], which forced people to hide into gallery forests in order to flee from '*air bombing that occasionally affected their settlements. Often, armed guerrilla groups and governmental troops passed close by and hijacked their belongings and cattle'* (Rivero et al. 1980, 290).

Most of the immigrants were peasants coming from the Andean region, who arrived to what is now the department of Casanare looking for lands to stablish themselves (Domínguez Ossa

[204] In parallel to imports, regional products such as *Sarrapia*, *pendare* (rubber), feathers, crocodile skins and furs (Martínez Orozco 2008, 258) were exported to the United States and European markets, which justified as well the installation of a German and a French Consulate by 1894 (Fajardo Becerra 2008, 86). Extractive activities relied on indigenous labour, which was directed by a foreman or *colono* who acted as an intermediary, constituting, thus, an exploitation relationship (Martínez Orozco 2008, 258).

[205] Also reported by interviewees. Fieldwork diary: June 8, 2018. The urban area was attacked in 1952 by the liberal guerrilla commanded by Guadalupe Salcedo. According to Domínguez Ossa (1994), the resistance of the liberal guerrillas in Casanare occurred in a frame of scorched-earth tactics, which involved systematic bombings, massive population displacement and destruction of farms and cattle (p. 102).

1994, 103). Most of these lands corresponded to indigenous controlled territories that were incorporated to *hatos* or *fincas*, frequently through violent means. According to Gómez López (1989), the intensification of land occupation triggered by the forced displacement of people toward *Orinoquia* region, increased pressures over indigenous groups, their resources and their territories (p. 97)[206]. Aggressions against Indigenous peoples in *Orinoquia* region has been part of a violence pattern (Bjork-James, 2014), which continues to occur in relation to land and resources appropriation (CCC 2009; Mininterior 2013b; Bjork-James 2014; Duarte Torres 2016; Defensoría del Pueblo 2017).

In the Salia territory of Orocué, conflicts over land and natural resources also took place. According to the elders that were interviewed, Salia families used to exert control over large areas which were progressively occupied by colonizers (*colonos*). This occupation did not constitute a problem itself in an early stage, since Salias kept good relations with non-indigenous neighbours and no land demarcation was considered necessary at the time. However, the interviewees recount how *colonos* started to intentionally allow their cattle to graze and circulate in areas controlled by the Salia families. Moreover, they would destroy Salias' agricultural plots through arson or through the intentional conduction of cattle over crops. The interviewees also mentioned threats and physical attacks aimed through which the *colonos* attempted to forcibly displace them, in order to increase the areas under their control. If Salia families moved away, their lands would be claimed as *colonos'* private property, to the detriment of Salia territory. These processes of land grabbing were possible because of three elements: the notion of *baldíos*, the question of access to justice and the rampant racism of the region, which are discussed in the following sections.

6.3.1.2.1 The '*baldíos*' in Salia territory

Lands in Orocué were considered '*baldíos*' by Colombian laws, which allowed its titling to individuals who proved an effective occupation, mainly through the establishment of crops or evidence of cattle grazing[207]. Consequently, this juridical tradition regarding land occupation and property has been a historical driver of deforestation and ecosystem degradation, as well

[206] Two cases are emblematic of the severity of the conflicts over land in *Orinoquia* region. On the one hand, the assassination of 16 Cuiva persons in 1967 known as the massacre of '*La Rubiera'* in the department of Arauca (Gómez López 1989; Bjork-James 2014); which was carried out by six men and two women (García Lozano 2013). On the other hand, the 1970 massacre of Planas (Meta) against the Sikuani people, which was carried out by members of Colombian armed forces (Gómez López 1989; Gómez López et al. 2012; García Lozano 2013).
[207] This requirement was first stablished in article 1 of law 200 (1936), a law that some consider as the first attempt of an agrarian reform in Colombia (Villaveces Niño and Sánchez 2015, 6)

as land dispossession for Indigenous peoples in Colombia. Moreover, this understanding of land occupation can be traced back to the colonial regulations, as discussed in chapter 2 of this dissertation.

The notion of *baldíos* is inextricably linked with the processes of colonisation, which corresponds to the occupation and use of lands by *colonos* that later become landowners. The enactment of law 135 (1961)[208] created an institutional setting for agrarian matters, in which the agrarian reform institute (INCORA) was in charge of administering the '*baldíos*'. Under this setting, the INCORA fostered the migration of landless peasants towards *baldío*s either directly, through planned colonisation, or indirectly, through the possibility of granting land titles over occupied lands. The pressure exerted by non-indigenous persons resulted in a continued reduction of the extension of lands controlled by Indigenous peoples, which forced them to obtain titles over their long-occupied lands and led the INCORA to 'reserve' lands for agrarian purposes, including Indigenous peoples titling requests[209].

6.3.1.2.2 Access to justice

The traits of frontier region found in *Orinoquia* favoured the conditions for impunity, which was exacerbated by the centralism that characterised the republican life of Colombia until 1991. In this context, complaints and lawsuits could be resolved in favour of perpetrators because of local collusion among authorities and powerful actors (Gómez López 1989; Bjork-James 2014; Calle Alzate 2017). Furthermore, access to justice was more difficult for indigenous persons due to their deficient or non-existing command of Spanish and due to the low levels of literacy, especially among Salia women. These elements would hinder the understanding of juridical procedures, while the access to an attorney would be limited by the lack of financial resources of most Salia persons. Moreover, the ratification of International labour organisation (ILO) convention 107 (1957) occurred only until 1967, which means that indigenous rights were not yet legally protected in this period.

[208] This law corresponds to the Colombian manifestation of the Latin-American wave of agrarian reforms promoted after the events of the Cuban revolution as part of the Cold war anti-communist strategies.
[209] This resulted in the creation of indigenous reserves. In *Orinoquia* region, 69 reserves were created between 1967 and 1980 (Calle Alzate 2017, 108).

6.3.1.2.3 Racism

People of *Orinoquia* region are characterised by a strong sense of belonging, hence the difference between the '*llaneros'* and '*guates'* discussed in section 5.2 Nevertheless, a further differentiation is made by the '*llaneros'* regarding indigenous persons and those who behave as indigenous persons, with a negative connotation in both cases. The world is divided by them between 'rationals' or non-indigenous persons (Pueblo Salia and Estrada Ramírez, n.d.)[210], and 'irrationals' as '*a synonym of indigenous'* (Jaramillo Botero 1997, 313).

On this regard, Bonfil Batalla (1972) explained how the category of indigenous is *'a supraethnic category which does not denote any specific content of the groups that it encompasses, but a particular relationship between them and the other sectors of the social global system of which they are members'* (p. 110). In *Orinoquia* region, the category of indigenous is usually conflated with what they call '*guajibos'*, a denomination derived from a name given to the Sikuani people, the '*Guahibo'*, during the colonial times. Nevertheless, the '*llaneros'* use the word '*guajibo'* for any indigenous person. Furthermore, the word '*guajibo'* becomes an insult with the connotation of stupid and/or savage. The way in which non-indigenous persons from Orinoquia region relate to Indigenous peoples is rooted in the underestimation and consideration of Indigenous peoples as lacking the attributes that are inherent to humankind[211] (Gómez López 1989, 88). According to Rivero et al. (1980), once Orocué flourished as a commercial node, the Salias who were not absorbed by the non-indigenous population, started to occupy an inferior position within the social status, as domestic workers.

Currently, the '*llaneros'* correspond to that part of the society who possesses the means of production in the region and who occupy most of the governmental positions. Therefore, indigenous related matters tend to be addressed under a frame built over racial structures that operate until present, in which all Indigenous peoples, the Salias included, are deemed to be lazy, dumb, cheaters, among other disqualifying and dehumanizing adjectives (Bjork-James 2014, 117)[212].

---

[210] Furthermore, some authors report that there were lamps made with indigenous persons' skin exported to Europe from Orocué (Mejía Gutiérrez 1987, 70; Jaramillo Jaramillo 2004, 60).

[211] Which partially explains why hunting and killing indigenous persons was normalized as a regular practice known through the verbs '*Guajibiar'* and '*Cuiviar'*, which meant to go hunting for Guajibo and Cuiva people (Bjork-James 2014).

[212] This sort of opinions about Indigenous peoples were mentioned in several interactions with public officers from the region. Furthermore, some of the interviewees mentioned that the Salias of Orocué were slightly 'more civilized' than those of the *resguardo Caño Mochuelo* located also in Casanare department.

6.3.1.3 The emergence of Salia *resguardos*

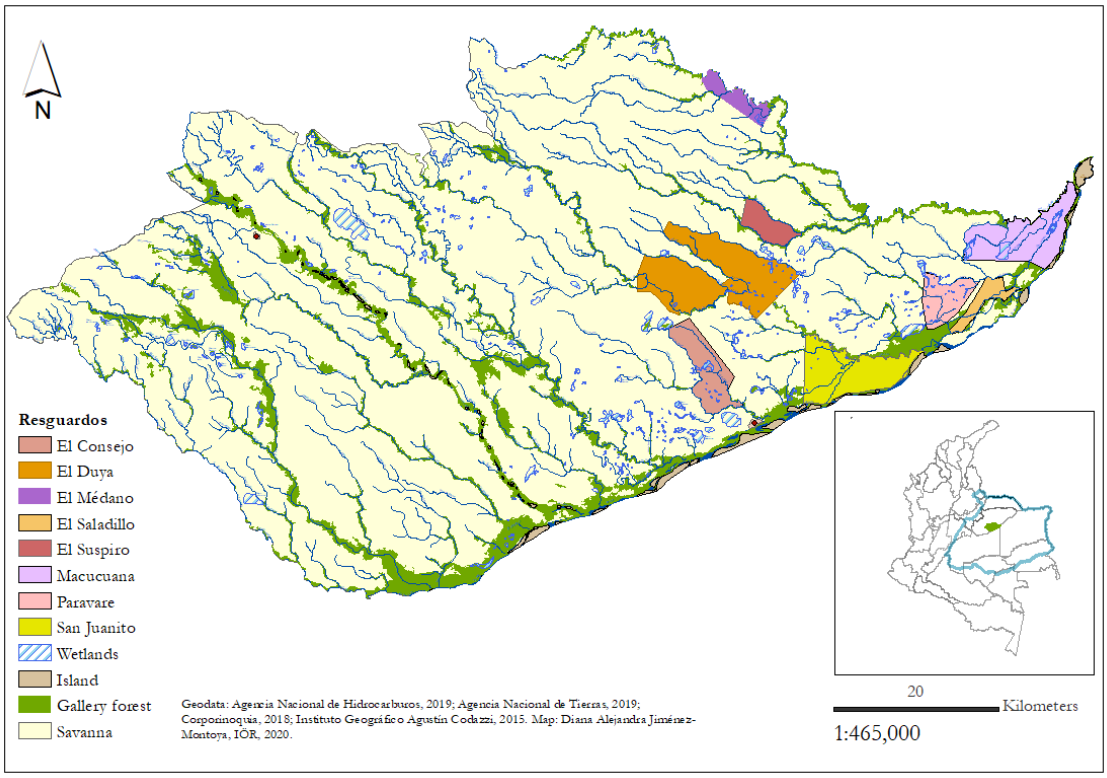
Before the creation of the eight *resguardos*, there was a demarcation of indigenous reserves as a result of the implementation of law 135 (1961). Nevertheless, the initial demarcation started because of the initiative of Salia people, instead of the Colombian State. The process initiated around 1975, when the leader of the Salia community back then sent a memorial to the the agrarian reform institute (INCORA), which later led to the production of a social-economic study (INCORA 1978). In 1978, three lots of *baldíos* were constituted as especial reserves by the INCORA for the areas known as *El Duya*, *San Juanito* and *Paravare*. After the approval of the ministry of agriculture in 1979, the reserves were legally recognised. However, the constitution as *resguardos* took place in 1982, through a resolution issued for the three areas that incorporated the boundaries as established in the early resolutions of 1978. The other Salia *resguardos* were created afterwards[213].

According to the elders that were interviewed, by the time of the bounding of the reserve, the relationships with their neighbours were tense, since land titling for Salias could imply the loss of land for neighbours. Consequently, the demarcation of *El Duya* resulted in a seemingly strange shape, compared by their residents to that of 'trousers' (*El Pantalón*), which is sometimes used as a way to refer to the *resguardo El Duya*. The location of the eight resguardos and the shape of *El Duya* can be observed in Map 6. Some elders affirmed that the people sent by the INCORA were willing to establish the boundaries in a different way, even if it meant evicting non-indigenous neighbours; however, the Salias of *El Duya* opted for demarcating in such a way that neighbours were not forced to leave but still had little incentive to stay. This was made by leaving colonizer's lands poorly connected or ill-shaped, so they were more inclined to sell or leave on their own. Such reasoning aimed at taking precautions, fearing retaliations from the neighbours; as several episodes involving violence had been perpetrated by colonizers against Salia individuals[214]. The elders also mentioned that INCORA officers asked them why it was necessary for them to have such a large reserve, to which they replied that the savannas were of a floodable kind and that there would be population growth, which justified the request of a large area.

[213] The *resguardo El Consejo* was also constituted in 1982, through a resolution issued the same day as the one for *EL Duya, Paravare* and *San Juanito* (resolutions 98 and 99 respectively). Then came the *resguardos Saladillo* and *El Suspiro*, also known as *Rincón del socorro*, through resolution 28 and 29 (1984), respectively. Finally, the *resguardo El Médano* was constituted through resolution 51 of 1992 and *Macucuana* through resolution 11 (1994).

[214] Fieldwork diary: June 9, 2018. An elder recounted the murder of a Salia person in the whereabouts of the *resguardo El Consejo*, perpetrated by a settler who had threatened other persons to keep them from fishing.

Map 6. Salia *resguardos* in the municipality of Orocué.



Source: author's own compilation. The Salia *resguardos* are located between the rivers Cravo sur to the east, Meta to the south and Pauto to the north.

The quick transformation of Salia reserves into *resguardos* contributed to secure those areas for the exclusive use of the Salia people; nevertheless, the reasons for such a swift change are unclear[215]. Moreover, the Salias of Orocué live on *resguardos* that were titled exclusively for the Salia people, covering an area of 374,02 km^2. Other Salias in the region share their title with other peoples, such as the case of the resguardo *Caño Mochuelo*, or lack of *resguardos*, such as those of the community *Kanalitojo,* which is inhabited by Sikuani, Salia and Amorúa families (URT 2015), as shown in Table 14. Moreover, Salia individuals or families are also found in other municipalities, without constituting Salia settlements.

[215] The case documented by Calle Alzate (2017), shows how another reserve in *Orinoquia*, the Wacoyo, was delimited in 1974 (p. 110), while the *resguardo* was created eighteen years later (p. 116).

Table 14. Distribution of the Salia people in *Orinoquia* region.

Indigenous territory	Area (km²)	Municipality	Indigenous people
Resguardo El Consejo	45,83	Orocué	Salia
Resguardo El Duya	117,85	Orocué	Salia
Resguardo El Médano	17,63	Orocué	Salia
Resguardo El Saladillo	15,95	Orocué	Salia
Resguardo El Suspiro	19,78	Orocué	Salia
Resguardo Macucuana	57,4375	Orocué	Salia
Resguardo Paravare	65,67	Orocué	Salia
Resguardo San Juanito	33,87	Orocué	Salia
Resguardo Caño Mochuelo	946,7	Paz de Ariporo	Maibén Masiware; Yamalero; Tsiripu; Yaruro; Amorúa; Waüpijiwi; Wamonae; Salia
Resguardo Santa Rosalía	57	Santa Rosalía	Sikuani, Salia
Resguardo Corozal Tapaojo	103	Santa Rosalía	Piapoco, Salia
Community *Kanalitojo*	5,7	Puerto Carreño	Salia, Sikuani Amorúa

Source: author's own compilation based on ANT, 2019; Mininterior (2013a); Mininterior (2013b).

6.3.2 Number of relevant actors; socioeconomic attributes; social capital

According to the census[216] updated every year by Salia authorities, the population of *El Duya* in 2018 was of 532 inhabitants. The percentage of women and men was of 47 % and 53 % respectively. Among the 532 persons in the *resguardo*, 51 of them were 60 years old and older; while 278 adults were between 19 and 59 years old. The other 203 persons were less than 18 years old. *El Duya* has a density of 4,5 inhabitant/ km², whereas the average density in Colombia is of 42,26 inhabitants/km².

As explained in chapter 2, the identification of someone as indigenous relies on three elements: self-identification, recognition of the community and dwelling on a territory. This is operationalised in the *resguardo El Duya* through their own census, which is made by counting all the people that belong to a family unit. Once they have listed all of them, another family unit is used to count their members and so on. The persons included in the count are those

[216] Pueblo Salia. 2018. Censo 2018 Resguardo El Duya. Database. Unpublished. ASAISOC.

considered as Salia, based on being born from a Salia mother and a Salia father. It is the parents who constitute the core definition of the family unit. According to the census, most of the population corresponds to Salia persons. Nevertheless, the younger generations have started to establish relationships with non-indigenous persons; therefore, there are many children and youngsters who are sons and daughters of a Salia person and a non-indigenous person and are denominated '*mestizos'*. While *mestizo* sons and daughters are directly included in the census of the *resguardo*; non-indigenous persons can be included in the census only if they are the partner of an indigenous person's, which also allows them to live inside the boundaries of *El Duya* [217].

The inclusion in the census constitutes the first requirement for people to enjoy external benefits and to access most of the resources of the *resguardo*. It implies as well, that the person must comply with the duties of every member of the community, since the lack of compliance undermines their legitimacy of obtaining any kind of benefit. Those who are not included in the census must comply with the general mandates but are not expected to perform duties that are linked with the potential access to benefits. Thus, the census instrumentalises the definition of an inhabitant of *El Duya*. From an external point of view, there is no possibility to determine who among all dwellers should be considered as part of the *resguardo El Duya*. However, there are internal mechanisms to identify outsiders based on the recognition of the people of the *resguardo*, their kinship relations and the identification of Salias from other areas[218].

From an external perspective, phenotype does not constitute a criterion to distinguish Salias from other inhabitants of the region. Furthermore, there is no sign (clothing, make up, corporal modification, accent) that make Salias observably different from the rest of the population of Orocué; nevertheless, the majority of the people from the *resguardo* do exhibit common characteristics of Amerindian populations, such as dark straight hair and brown skin colour. The Salias share an appearance common to *mestizos'* sectors of the population. Nevertheless, it is evident that neither Salias nor *mestizos* are the common phenotype of businesses owners or public officers in the urban area of Orocué. This racial segregation plays a role in the way that Salia relationships with other groups of society are developed, according to the discussion of section 6.3.1.2.3.

[217] The 2018 census includes at least four people who are not indigenous. However, there is one case of a non-indigenous man who is the partner of an indigenous woman who was not born in the *resguardo El Duya*. In this case, the household was allowed to live there but was not counted as inhabitants of the *resguardo*.
[218] The families that can be found in each sector of the *resguardo* constitute family lines (e.g. the Caribanas, Pónares, Pumenes in *Piñalito*; and the Yavimays and Darapos in *Cucurital*. According to Rivero et al. (1980), the Salias practice ethnic endogamy *de facto* (p. 297).

There is a boarding school in which the totality of the Colombian system's educational levels is offered[219]. The construction of the school facilities and its later constitution as a boarding school resulted from initiatives promoted by the people of *El Duya* since the decade of 1960[220]. In 2006, a joint work between the Salia organisation of the *resguardo Caño Mochuelo* and traditional Salia authorities association of Orocué (ASAISOC) resulted in a communal educational project of the Salia people of Casanare, which contains the orientations for the strengthening of intercultural education in the schools located in areas controlled by Salias. Nevertheless, intercultural education remains a challenge, which is evident in the current situation of Salia language situation, which is considered in critical danger of disappearing (Estrada Ramirez 2014; Ospina Bozzi 2015).

Access of Salia people to higher education is scarce. Among the 329 persons who are above 18 years old, 90 have completed high school education. Among this last group, only 36 persons have carried out some further study, among which only two men have studied at the university and have obtained a bachelor's degree[221].

Paid labour is mostly related to agriculture and livestock activities in farms outside *El Duya*; however, there can be sporadic hiring inside the *resguardo*. Jobs related to cattle farming are always performed by men. Recently, more job opportunities have emerged in relation to rice and palm oil cultivation. Most of these jobs are temporary and require that the workers remain away from the *resguardo*. Women's access to paid labour occurs mainly with regard to cleaning and cooking, either in farms or in the urban area or Orocué. Other sources of employment are related to governmental activities, the school, for example, requires of hiring of teachers, cooks and cleaning staff. and occasional hiring or qualified labour force for indigenous specific programs, e.g. health plan. Additionally, the government of *El Duya* promotes that dwellers of the *resguardo* provide services related to meetings' logistics, e.g. cooking, lodging; as well as the internal commercialization of agricultural products by purchasing livestock or plantain to be used during such meetings. In these cases, the services and good providers are selected considering criteria such as the need of cash, the availability of products/time and the turnover of those who have been given the opportunity in the past.

Self-employment is also found mainly through small grocery stores located in the families' houses, as well as catalogue sales or mowing lawn on demand. Nevertheless, paid labour in

[219] The institution has been named in Salia language *'Iea Pũdi'*, which means roots and dreams.
[220] Fieldwork diary: May 12, 2018.
[221] This information has been obtained from the 2018 census data base of the *resguardo El Duya*.

relation to oil production in *El Duya* has been crucial for almost two decades. Table 15 presents an overview of the paid labour fostered by oil extraction, which are carried out mainly by men. Women in *El Duya* have been providing services for the workers, such as cooking meals and washing clothes for the workers.

Table 15. Paid labour related to oil extraction activities.

Phase	Type of employment
Environmental impact assessment	Guides, field work assistants (equipment carrying), pollsters and key informants
Seismic prospection	Guides, field work assistants (vegetation removal, digging, equipment carrying)
Drilling	Non-qualified work (digging, equipment carrying)
Extraction	Traffic controllers

Source: author's own compilation.

In addition to this, the prior consultation processes result in agreements and commitments that are very frequently of economic nature. These are usually related to the funding of 'projects' by the company that intends to carry out the activity. According to the interviewees, many projects aimed at the generation of income have been implemented with funds provided by oil companies. According to the interviewees, the presence of oil related activity in the *resguardo* has had contradictory effects on their livelihoods. On the one hand, it has disrupted the labour market, as the wages offered by companies for low qualification jobs usually exceed the amount of money that a worker could obtain in other economic sectors with the same level of qualification. For example, while a person with a technical qualification who is hired by the municipality can be payed up to 389 Euros per month, a person with a basic qualification, maybe high school level, can be payed 748 Euros per month for carrying out activities with a lower time demand. On the other hand, he availability of cash has resulted, for example, in the possibility to purchase motorcycles, which has improved the transport conditions for commuting and even for performing cattle farming activities. At the same time, that availability of cash has resulted in a decrease in crop cultivation, since food can be purchased in the urban area of Orocué.

Therefore, people's livelihoods in *El Duya* have been changing towards an increase in paid labour, in contrast to the situation of the generations prior to the creation of the *resguardo*. Nevertheless; the core of the livelihoods in *El Duya* continues to be nature based. The changes concerning livelihoods are interpreted as positive and negative at the same time. While it is

recognised that they foster acculturation processes of (Pueblo Salia 2011, 54; Pueblo Salia 2011, 72); the access to new technologies for communication and transport is also appreciated.

6.3.3 Location; knowledge of SES (mental models)

The dwellers of *El Duya* identify five sectors in which the *resguardo* can be divided: *La Unión-Tujúa*, *Cañijirriba*, *Quiteve, Piñalito or central* and *Cucurital*, where the last two are the more densely populated areas. According to the interviewees, *Piñalito* consolidated first and it resulted from a progressive occupation of available spaces in the proximity of the school, the main road and other facilities, such as the communal meeting hall. *Cucurital*, on the other hand, emerged from the growth of a handful of family lines which led to the construction of a primary school, so kids didn't have to go to *Piñalito*. The walking distance between *Piñalito* and *Cucurital* can be covered after 40 minutes through a road that is mainly used during the dry season, since it becomes muddy and slippery during the rainy season. Both settlements are located in the banks of *Caño Duya*, the former on the left bank one and the latter on the right bank. A smaller concentration of houses is found in *Caño Tujúa*, located in the left bank of *Caño Duya,* while the rest of the houses are dispersed in higher parts of the Savanna called *bancos*.

Most *bancos* correspond to the border lines of the larger waterways or c*años*, that is, the outer part of the concave topography that constitute floodable savannas. These places exhibit very little risk of flooding, except for extreme weather events. Furthermore, this location facilitates access to gallery forests, which constitute the fringe between the water bodies and the houses. None of the sectors has been demarcated and are used to provide quick references about the location of houses. Moreover, the location of *bancos*, roads and other topographic features corresponds to common knowledge, especially among elders.

6.3.4 Technologies available

Most of the houses are built with long lasting materials, with walls made of cement blocks and/or bricks and concrete columns (Arévalo Peña 2011, 104). The roofs are frequently installed with zinc tiles because of their low cost. However, some houses have fibre cement tiles (Arévalo Peña 2011, 78). The predominance of houses with these characteristics results from the implementation of a housing project in 2002 fostered by the government of Casanare, which subsidized the construction of 74 houses in *El Duya* (Arévalo Peña 2011, 76).

All dwellers are entitled to have a house; nevertheless, no new houses have been built with long lasting materials (bricks, cement, industrial tiles) in addition to those built in 2002. Currently, some houses still use traditional materials but very few houses are completely built with them. The rare cases that can be found correspond to temporary houses, mainly of recently formed couples[222]. In some cases, houses have been enlarged as the family grows. Despite the change in the technologies for housing, many houses emulate the traditional distribution which considered two areas, male and female areas, where the first one was used for sleeping and the second for cooking and meeting relatives (Pueblo Salia 2006, 50).

Crop cultivation is made mainly through slash and burn, through which a plot called '*conuco'* is set for agricultural activities in the gallery forest area. Under this system, logging is currently done with chainsaws that can be borrowed or rented in *El Duya* or in the urban area or Orocué. The burning of plots is usually started with fossil fuels and is managed and extinguished without machine aids. As well, the cultivation and harvesting are carried out only with manual labour. Transportation of logs requires of animal traction and eventually the use of a tractor. The commonly owned tractor of *El Duya* can be used for growing foreign pastures in the savannas, as well as for other communal needs, like creating fire breaks or for the transportation of building material. Technologies such as inorganic fertilization and amendments depend on the economic capacity of each household. In addition to the one tractor in the *resguardo*, no other machinery is available. The other major agricultural activity, cattle ranching, is done extensively with minimal management, which consists of marking, vaccination, parasite control, provision of minerals and provision of some shelter. Artificial fertilization is rare and depends on the conditions of each household.

Hunting is still done with bow and arrow; however, compressed air arms are also available. Traps are used depending on the type of prey. Fishing gear is not automated and is mainly done with hooks, nets and traps; although bows and arrows are also used. Some types of nets and traps require minimal labour, since they can be left unattended for long periods. Currently, the use of toxics for fishing has been reported as an abandoned practice.

Concerning the means of transport in *El Duya*, the most important is the motorcycle. Almost every household possess at least one vehicle, except for elderly people who are not physically apt to drive a motorcycle. Walking inside the *resguardo* is rare, since people know each other and offer free transport to their neighbours in their motorcycles. Commuting to the urban area

[222] Fieldwork diary: May 3, 2018.

of Orocué is common. People usually go there to purchase groceries, medicines, clothes, as well as to access services such as health care, financial and governmental services. Some people work or study in the urban area and commute every day. Others stay in the urban area during working days and commute on weekends. It takes between 20 to 40 minutes to go from the *El Duya* to the urban area, depending on the state of the road, which fluctuates with the rain.

Bicycles are also used, mainly by students to go to school and horses are used mainly for livestock ranching related activities. Both alternatives are currently used only inside the *resguardo*. Before public transportation was available, the inhabitants of *El Duya* had to use these means to go to the urban area of Orocué. Currently, public transportation by bus is available five times a day towards the urban area of Orocué or Yopal. The bus service even allows passengers to carry big packages such as fertilizers, farm animal's food or tools. Motorcycle taxis can be hired to transport passengers and goods from the urban area to the *resguardo* at reasonable prices, compared to renting a car.

6.4 Governance systems

The governance system in *El Duya* is inextricably related to the dynamics of the traditional Salia authorities' association of Orocué (ASAISOC) formed by the eight Salia *resguardos* of Orocué. Internal and external relationships are regulated by a common frame that emerges from the general assembly of the association, which is also integrated by the dwellers of *El Duya*. According to the nomenclature proposed in the social-ecological systems framework (SESF) this variable can be approached through two second-tier variables: Government organisations and Non-government organisations. Indigenous peoples are entitled to exert authority over their people; thus, it is possible to consider the indigenous government of El Duya as a governmental organisation. Furthermore, the *resguardo* includes other organisations such as the council of justice, which could be analogous to the idea of separation of powers and therefore could not be considered as part of the government. Nevertheless, it is considered here that this division between governmental and non-governmental proposed in the SESF frame is not appropriate for Indigenous peoples, who conceptualise their internal organisation as '*gobierno proprio*' or 'own government'. Further analysis of how this conceptualisation is related to the organisation of the republic is beyond the scope of this dissertation. The organisations found in *El Duya* are discussed in chapter 7 with regard to indigenous institutions, while the larger frame provided by ASAISOC is discussed in the following section.

6.4.1 Indigenous organisation; network structure

The traditional Salia authorities' association of Orocué (ASAISOC) was created for the *resguardos* of Orocué only; even though it could have been formed with Salias from other municipalities. This kind of associations is regulated by a national level norm, through which they are considered as public law entities, with a legal personality, assets and administrative autonomy. The ultimate authority in these associations is an assembly, whose conformation and functions vary according to their own statutes. According to the valid statutes approved in October of 2017, the structure of ASAISOC has three parts, as shown in Table 16: the general assembly (TIE SALIA YẼ´ẼDAGADU / *Todos los Salia reunidos*); the board (MA'ADU YẼ´ẼDAGA / *Reunión de los que Mandan*) and the Highest Salia council (*Consejo Mayor Salia*).

Table 16. Salias' association organisational structure.

Component	Members	Comments
Board	The *cabildos* of the eight *resguardos*	Board's functions: control over the highest council, make regular financial contributions to the association and approve the projects that develop the life plan (art. 13).
General assembly	21 Delegates from each *resguardo*	Women should be part of the assembly, however, no figures are provided (art. 10). Delegates are selected in a communal assembly in each *resguardo*. Members are elected for four years. A session is considered valid when half plus one of the delegates are present.
Highest council	One fiscal controller and 8 counsellors for each area: -Highest counsellor -General, management and communications -Finances and projects -Territory, environment and planning -Interculturality and Salia education -Woman, family and culture -Youth, recreation and intercultural sports	Requirements for the election (art. 16, 17). The functions of the counsellors and the council are established in subsequent articles (18-28). The procedure for the election is left to be determined by the assembly. In the case of the fiscal controller, the general assembly postulates candidates, one of which is chosen by unanimous decision or vote. The highest counsellor legally represents ASAISOC.

Source: author's own compilation based on Pueblo Salia (2017).

The eight *resguardos* take turns to host the meetings for the general assembly and all Salia individuals are expected to take part of them. The members of ASAISOC tend to be elected among former *resguardo* governors and people with little experience is elected exceptionally. However, there are no strict regulations concerning the election of counsellors of each *resguardo* and possible imbalances in representativity are discussed by the assembly. ASAISOC takes part department, regional and national indigenous networks, which are discussed in section 6.5.6. Internally, the board and the highest council are part of the general assembly; however, since the meetings of the latter are not frequent, the interaction between counsellors and governors is more dynamic, either for decision-making or for exerting control over the performance of the counsellors.

6.4.2 Property rights systems

The area demarcated as the *resguardo* corresponds to a collective title under the constitutional framework of Colombia. Moreover, art. 59 of the constitution indicates that collective titles, since they are a form of property, have a social and ecological function that entail duties. The national constitution states, as well, that r*esguardos* are inalienable and imprescriptible. The lands in the *resguardo* respond to a collective property regime. This regime opposes the notion of private rights over land, which conceive it '*as an object to be disposed of, appropriated, used and abused; with a concept of mutual belonging between human being and territory'* (CCC 2016a).

Within the boundaries of *El Duya*, dwellers have usufruct rights over land and other resources, including infrastructure. Neither individuals nor the government of the *resguardo* may engage in market transactions concerning lands. If natural resources are extracted from the *resguardo* and commercialised outside the boundaries of *El Duya*, they are regulated by non-indigenous environmental authorities. In such case, the prohibitions over wildlife commercialisation and restrictions over other natural resources are enforced by external authorities, even if an indigenous person is in possession of the resource.

6.5 Action situations

The information included in this section corresponds to some of the second-tier variables identified in the social-ecological systems framework (SESF) listed under the variables

Interactions and Outcomes, which are intended to present the interplay between first-tier variables of the framework.

6.5.1 Harvesting; importance of resource

People in *El Duya* carry out multiple activities for their sustenance, most of them simultaneously, which range from self-supply agriculture to paid work, inside and outside the *resguardo*. Agricultural activities correspond mainly to the growing of *conucos*, with *Manihot sp., Musa sp.* and *Zea mays*. Other species are used, but not extensively. According to interviewees, c*onucos* are used for a maximum of five years and plots would be left unattended afterwards, while another *conuco* would be prepared. Each *conuco* has 1 or 2 ha, while some people prefer to divide *conucos* in plots of 1,5 ha for annual crops, which may yield up to three harvests, and 0,5 ha for collection of dry wood.

Some agricultural plots can be found in the savannas; however, the soil there has a poor quality and requires of additional fertilization and low pH correction, sometimes even mechanization. Consequently, savanna plots can be grown only by families with enough money to purchase agrochemicals or by those who can obtain cattle manure, which is used instead of agrochemicals in a process called '*majadeo*' to improve soil conditions. Livestock ranching is done in an extensive way with herds managed by each family unit. The cattle are sold alive to obtain cash and is used to a lesser extent as a source of cheese and milk. Occasionally, animals are slaughtered inside the *resguardo* and meat is sold per kilogram. However, not all families engage in cattle ranching. In contrast, most families use the natural resources of El Duya on a daily basis. The way in which nature is used is shown in Table 17.

Table 17. Use of ecosystems and their components in *El Duya*.

Unit	Ecosystem	Purpose	Component
Savannas	Floodable	Cattle farming	Native pastures such as *Panicum laxum; Paspalum notatum; Axonopus purpusii*"*
		Animal protein procurement	Wildmeat such as *Cachicamo* (*Dasypus spp.*)*; *Venado* (*Odocoileus virginianus*)*; *Galapaga* (*Podocnemis voglii*)*.
	Bancos	Infrastructure construction	Soil (area).
		Agriculture	Soil (area).
		Construction material procurement	Soil (clay-sand****).

		Non-timber forest products procurement	Leaves of *Chaparro manteco* (*Byrsonima crassifolia*)* and *Chaparro* (*Curatella Americana*)*.
Wetlands	*Esteros*	Animal protein procurement	Fish (no information available on species).
		Handicraft material procurement	Soil (Clay - sand).
		Livestock watering	Water.
	Lagoons	Animal protein procurement	Mammals such as *Chiguire* (*Hydrochaeris hydrochaeris*); Fishes such as *Coporo* (*Prochilodus mariae*)* and others; *Galapaga* (*Podocnemis voglii*)*.
	Madreviejas (Oxbow lake)	Animal protein procurement	Mammals such as *Chiguire* (*Hydrochaeris hydrochaeris*); Fishes (no information available on species).
	Caño (Stream)	Animal protein procurement	*Guabina* (*Hoplias spp.*)*, *Curito.*
		Construction material procurement	Sandy and Clay Sediments.
	Canal (Channel)	Animal protein procurement	Fishes such as *Guabina*, *Curito.*
	Morichales (areas with *M. flexuosa)*	Non-timber forest products procurement	Fruits, leaves of *Mauritia flexuosa**.
		Livestock watering	Water.
	Nacederos (springs)	Livestock watering	Water.
Gallery forest	*Monte* (Forest)	Animal protein procurement	*Lapa* (*Cuniculus paca*); *Picure* (*Dasyprocta sp.*); *Paujil* (*Mitu tomentosum*).
		Timber procurement	*Cedro* (*Cedrela odorata*)*, *Guamo* (*Inga spp*)*; *Caimito* (*Pouteria sp)*; Caraño* (*Protium spp.*)*; *Cimbrapotro* (*Calliandra sp.*)**; *Ceiba* (*Ceiba pentandra (L.) Gaertn)*; Guarataro* (*Vitex orinocense*)*; *Cachicamo* (*Calophyllum spp.)*, Matapalo* (*Ficus spp.*)*; *Jobo* (*Spondias mombin)**; Saladillo* (*Caraipa llanorum*); *sangrito* (*Machaerium spp.*)**, *Trompillo* (*Guarea spp.*)*; *Cabo de Hacha* (*Aspidosperma excelsum Benth*)*, *Pomarroso (Syzygium malaccense*)*, *Yarumo* (*Pourouma spp.)Cocomono, Cuajo, Garrapato, Macanito, Mulatico, Naranjito, Quince días, Rabo de Coporo, Colorado, Rabo de pavo, Reventillo, Tuno, Vara de hierro, Majagüillo.*
		Non-timber forest products procurement	Leaves of *Palma real* (*Attalea butyracea*)**; *Coroba* palm, *Cubarro* (*Bactris spp.*)**; *Cucurita* (*Attalea maripa*)*; *Macanilla* (*Bactris gasipaes* var. chichagui)***, *Romadizo'*'.*

Source: author's own compilation based on own observations and literature review. Species identification is based on Trujillo et al. (2011)*, *'' Peñuela Recio et al. 2011; Peñuela Recio et al. (2012)**, '*' Pueblo Salia (2012); *Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Red Nacional de Jardines Botánicos de Colombia* (2013)***. Description of materials is based on SGC (2014)****.

6.5.2 Information sharing

According to the people interviewed in *El Duya*, there are studies about the *resguardo* that have been conducted by organisations hired by the oil companies. Nevertheless, the members of the *cabildo* denied permission to access such studies while conducting fieldwork. Nevertheless, some of the interviewees said that there were problems with the management of the documents in the *cabildo* office and mentioned how some documents had been lost because of lack of attention. When asked about the outcomes of past studies, none of the interviewees made a specific reference to a study or person; although some people did mention that students had come to the *resguardo* to conduct activities related to their dissertations. Moreover, none of these works is quoted or acknowledged in the documents produced by the Salia people of Orocué.

Later, a request was made to the traditional Salia authorities association of Orocué (ASAISOC) in order to read these documents; however, the counsellors explained that some of this information was exclusively managed by the *resguardo*, because they were entitled to decide what to share with ASAISOC. They explained, as well, that whenever activities conducted in the *resguardo* are promoted by ASAISOC, the association stores the information, which can be accessed by any inhabitant of the *resguardo*. In contrast, non-indigenous persons can access this information only if allowed by the members of ASAISOC.

6.5.3 Conflicts

Conflicts pertaining environmental sustainability in the *El Duya* are related to three main elements: land grabbing; oil extraction-related activities and armed conflict, which are described in the following paragraphs. Other types of conflicts were not considered for this research.

6.5.3.1 Land grabbing

The Salias of Orocué have used juridical tools to secure their control of the territory, which resulted in the constitution of special reserves and later in the titling of *resguardos*. Nevertheless, their interest in the creation of *resguardos* responded to the need to avoiding further land dispossession, through the protection offered by collective titles. *El Duya,* as the rest of Salia *resguardos,* is located in a region characterised by the presence of large extensions of *baldíos*,

about which there is no accurate information concerning their size and exact boundaries. Furthermore, when a person is granted a property title over a *baldío*; there is no proper acknowledgement of the history of the property and how it was acquired. Consequently, the titling process is not concerned with avoiding unlawful procedures regarding the *baldío*.

In this context, the titling of *resguardos* has not prevented unlawful ways to grab indigenous lands[223]. Currently, there are two cases of attempted land grabbing affecting *El Duya,* while other cases were reported for the *resguardos El Consejo* and *El Médano*. The *modus operandi* is characterised by the installation of fences beyond the boundaries of the neighbouring property, incorporating thus the land of the *resguardo* within their domain. In one case, the existing fences were moved by a neighbour. This person took advantage of the remoteness and the regular flooding of the savanna to relocate the fence, moving it within the area that rightfully corresponds to the *resguardo* and resulting in the encroachment of 10 ha. Furthermore, when the people of *El Duya* found out about the fence, the *cabildo* ordered its destruction, which was utilised by the neighbour as a reason to sue the people of El Duya. The other case occurred in an area where nothing had been built before. There, a neighbour extended his domain through the fencing of a portion of the *resguardo* which was later sold. Currently, two farms can be found in that area, *Finca la tigrera* and *Finca el morichal*. Moreover, the houses of those farms are visible from the houses located in the *resguardo*. Even though this can be considered illegal, the likeliness of its occurrence is related to the lack of transparency and control over land appropriation, as discussed in the section 6.3.1.2.1, which constitutes a national-level concern that was even included in the peace accords of 2016.

6.5.3.2 Oil extraction activities

The first oil pit in *El Duya* was drilled in 1983 by the company Occidental de Colombia (OXY) (Roldán Ortega 1995, 280; Franco García 1997, 241), before prior consultation was included in Colombian regulations. According to the information provided by interviewees, the company offered payments in-kind in order to compensate for the damages caused by the installation of this pit. Later, the company would and later, distribute cash among the people

[223] The mechanisms used in these processes have been widely documented by the national centre for historical memory, as well as by indigenous organisations. These mechanisms include forced displacement and factual occupation. The lands are then used for extracting resources available there or illegally incorporated into the land market. See: CNMH. 2015. *Una nación desplazada: informe nacional del desplazamiento forzado en Colombia*. Bogotá, CNMH – UARIV. http://www.centrodememoriahistorica.gov.co/descargas/informes2015/nacion-desplazada/una-nacion-desplazada.pdf

of the *El Duya*. With the arrival of other companies to Orocué, the practice of giving cash to the indigenous population instigated division among the Salia people, since *resguardos* started to negotiate with oil companies on their own instead of negotiating as a group. Furthermore, the effects of this practice seem to carry on to the present, considering that several Salia authorities warned about the tendency among Salias to ask for money as a condition to be interviewed[224].

Since the decade of 1970, exploration activities in Orocué were carried out by several oil companies[225], which means that the oil companies arrived to Salia territory in the absence of prior consultation. Effective extraction began in 1994 with 11 productive pits (Franco García 1997). Indigenous interviewees also described how the transportation of machinery and crude oil disturbs their lives because of the noise, vibrations and dust that have not been properly mitigated. Furthermore, Salias also report being affected by respiratory problems related to the dust, mainly their children. Additionally, roads exhibit no measures towards the prevention or mitigation of wildlife roadkill and risks related to traffic.

The interviewees further identified aspects such as the increase of indigenous women giving birth to the children of male staff of the oil companies, who would later abandon them. As well, interviewees mentioned that there was a drastic increase of alcohol consumption, especially among men, which was purchased with the money obtained from oil companies. Finally, interviewees identify a decline of customary practices caused by the presence of foreigners and the changes in their livelihoods. This has fostered internal conflicts because some people started to gravitate around the income obtained through oil companies and refuse to take part in collective action.

6.5.3.3 Armed conflict

It is difficult to assess the extent to which the Salias of Orocué have been affected by armed conflict. On the one hand, they are not part of the group of 36 Indigenous peoples with

[224] Which was not a problem for this research.
[225] Elf Aquitaine, bought later by Kelt Energie France; Texaco; OXY.

specific protection measures mandated by the constitutional court as of 2009[226]. On the other hand, very few information is available about how Salia victims have been registered and protected. Nevertheless, this does not imply that they have not been affected by armed conflict, considering the presence of armed actors in their territory.

Members of the Colombian army can be seen on a regular basis circulating through the main roads of the *resguardo*, who sometimes stop by the sector of *Piñalito*, as observed during fieldwork.[227] As well, illegal armed groups continue to operate in Orocué. However, these illegal groups have also been linked to legal economic activities. In 2014, the oil multinational company Perenco, who has operated in the Salia territory, was accused of funding Paramilitary groups in the department of Casanare (CONPAZ 2014, 118; TSDJB 2016, 251; Gillard 2018). Perenco started its general operations in 1993 and has been questioned for having profited from the *modus operandi* of the '*Bloque Centauros'*, because of the security that this group provided for their exploitation pits, which secured, in turn, the expansion and consolidation of the company in the region (TSDJB 2016, 288). Such region corresponds to the southern areas of the municipality of Paz de Ariporo (p. 252), which neighbours Orocué.

According to some interviewees, paramilitary groups operated in *El Duya* and surroundings during the decade of 2000. Someone informed that they had threatened, displaced and even murdered Salia people of other *resguardos*. This should be understood in a context in which many of the members of paramilitary groups in Casanare did not go through the formal demobilisations that took place in the decade of 2000; therefore, there is currently a cohabitation between victims and aggressors, which was commented by some people during fieldwork activities.

Finally, the national agency for victims (*Unidad para las víctimas*) indicated that the Salia people of Orocué was in the stage of the enlistment for the process of collective reparation, where

[226] Since the dynamics of armed conflict in Colombia have had an especially severe impact over Indigenous peoples; some of them have been granted special protection. The Salias were included in a group of prioritised Indigenous peoples for the implementation of a governmental *'Plan for supporting indigenous communities in vulnerability conditions and risk of disappearing'* (CCC 2009). Their inclusion was justified by the assessment in which the plan was supported, which indicated that they were in *'risk of disappearing due to the progressive decrease in the population and semi nomadism without integral alternatives of sedentarization'* (CCC 2009). Nevertheless, the court considered that the criteria used for that plan did not include armed conflict, nor its impact over forced displacement or confinement over Indigenous peoples. Therefore, further measures did not include the Salias.
[227] Fieldwork diary. May 4, 2018.

information about the identification of victims and types of impact caused in relation to armed conflict is being gathered[228]. So far, no reparation has been implemented.

6.5.4 Investment activities

Resguardos receive financial resources transferred by the national level, according to what is established in the national constitution. These resources are used for funding territorial entities and *resguardos* for the provision of education, health, drinking water and waste management services. This is called the general shares system (SGP), which assigns 0,52 % of the total resources to the *resguardos*[229]. The total budget is distributed according to the population of each *resguardo*, which is certified by the national statistics department (DANE) to the national planning department (DNP 2019b). Nevertheless, the intermediation of a municipality is necessary. The *resguardo* and the municipality sign a contract which must be send to the national planning department (DNP) before the beginning of the following year, in order to be included in the yearly resources' allocation. The resources can be used in any sector; if a project has been formulated and included in the contract signed between the *resguardo* and the municipality. Currently, eight *resguardos* and one association of *resguardos*[230] have been certified according to decree 1953 (2014), which enables them to carry out the direct administration of their share of the resources included in that 0,52 %.

The resources of the SGP for *El Duya* are administered by the municipality of Orocué, which are invested according to projects formulated by the *resguardo* and approved by the municipality. The administration role of the municipality involves the estimating the costs, establishing tender requirements, selecting the tender winner and auditing the implementation of the project. The people of *El Duya* has no formal saying in such process. The municipality makes other investments in *El Duya* using resources that are not part of the allocation of Indigenous peoples, like the sports facilities, for example. Sometimes, there are additional financial resources available as a result of the compensations that oil companies provide for their extractive activities, which result from prior consultation processes.

---

[228] According to the information provided by the national unit for victims (UNV) in response to a petition filed in 2018, which was given the code LEX 3253721, number 201817015204331.
[229] For 2019, this corresponds to 197200000000 Colombian pesos that is 56000 Euros approximately. According to the national planning department, these resources are distributed among 824 *resguardos* (DNP 2019b, 28)
[230] The association is currently managing the resources of 10 resguardos: *Arhuaco de la Sierra, Kankuamo, Zenú San Andrés de Sotavento*, located in the Caribbean region, *Cristianía Páez de Corinto, Totoró, Iroka, Meullamues*, located in the Andean region. The association '*Asociación de resguardos indígenas pacande*' is also located in the Andean region.

Furthermore, environmental management plans resulting from the environmental impact assessments (EIA), must contain measures towards the management of social impacts, which sometimes involve investments to support communal activities. In *El Duya*, oil companies have invested in agricultural activities, including machinery, as well as in bakery and clothing-making equipment, none of which is currently used in the *resguardo*. Nevertheless, it is difficult to tell which investments correspond to the implementation of the management plan and which correspond to the companies' social responsibility programs.

6.5.5 Lobbying activities

As Colombian citizens, Indigenous peoples can exert their right to vote in municipal, department and national level elections. The people of *El Duya* use election periods to negotiate with candidates in order to obtain jobs and the installation of infrastructure in exchange for their votes. Even though the government of the *resguardo* is not entitled to instruct people regarding who to vote for; the leaders can be asked by a candidate to cooperate with her/his campaign through the organisation of a meeting inside the *resguardo*, so the candidate can interact with the potential voters. This is particularly important for municipal elections, in which Indigenous peoples' votes can make a difference. Department-level candidates also aim at obtaining votes in *El Duya* and follow a similar approach to municipal candidates. In contrast, national level elections do not offer significant lobbying opportunities for the *resguardo* level. For these elections, the traditional Salia authorities' association of Orocué (ASAISOC) does provide instructions regarding how to vote. Nevertheless, individuals make their final decision.

6.5.6 Networking activities

El Duya participates in networks found in three levels. The first one corresponds to a both geographical and organisational network, which is composed of the eight Salia *resguardos* in Orocué, with a node in every *resguardo*. Historically, there have been exchange relations between *resguardos* which include natural resources such as sand, wood and palms, where *El Duya* has been an attractor because of the school to which students from all the *resguardos* come. Furthermore, people from *El Duya* look for partners in other *resguardos* almost invariably, because of the close kinship relationships inside *El Duya*. Once the couple is

formed, they choose a place to settle, either in *El Duya* or in the *resguardo* where the partner lives, which promotes exchange and interaction with Salias from other *resguardos*. Furthermore, activities promoted by the traditional Salia authorities' association of Orocué (ASAISOC) rotate among *resguardos*, in order to promote equity in terms of travel effort and responsibilities over logistics.

A second network corresponds to the regional indigenous organisation of Casanare (ORIC), which is integrated by all of Indigenous peoples of the department. The members of the government structure of ORIC are indigenous persons from the 11 Indigenous peoples of the department of Casanare. A third network corresponds to the national indigenous organisation (ONIC), which is integrated by 47 indigenous organisations, found in 28 of the 32 departments of Colombia (ONIC 2019) and are further grouped by regions. *El Duya*, as part of ASAISOC, integrates the 'Macro-regional *Orinoquia*' through ORIC, along with the associations of Indigenous peoples of Arauca department (ASCATIDAR), Meta department (UNUMA), Vichada department (CRIVI) and the association of the U'wa people (ASOU'WA). One of the inhabitants of *El Duya* is a representative at the Macro-regional organisation. Furthermore, a meeting was held in May of 2018 in Orocué to discuss the regional structure and other meeting were held in the *resguardo Caño Mochuelo* in which the governor of *El Duya* took part.

Finally, there are currently two projects in which the *resguardo El Duya* is involved, as part of ASAISOC. One is funded by the global environmental fund (GEF), through the small grants programme, which aims at developing a community biodiversity inventory in the eight Salia *resguardos*. In this project, the national institute for biodiversity research (IAvH) and the NGO Tropenbos act as intermediaries. The second project is fostered by the NGO ÃXU TANA, created by a former Salia leader, which aims at providing education for adults who could not finish their secondary school. In both cases, networking is more or less active depending on the project's horizon; however, the relationship with the NGO and the IAvH started long before the projects were formulated.

7 THE RELATION BETWEEN HUMANS AND TERRITORY

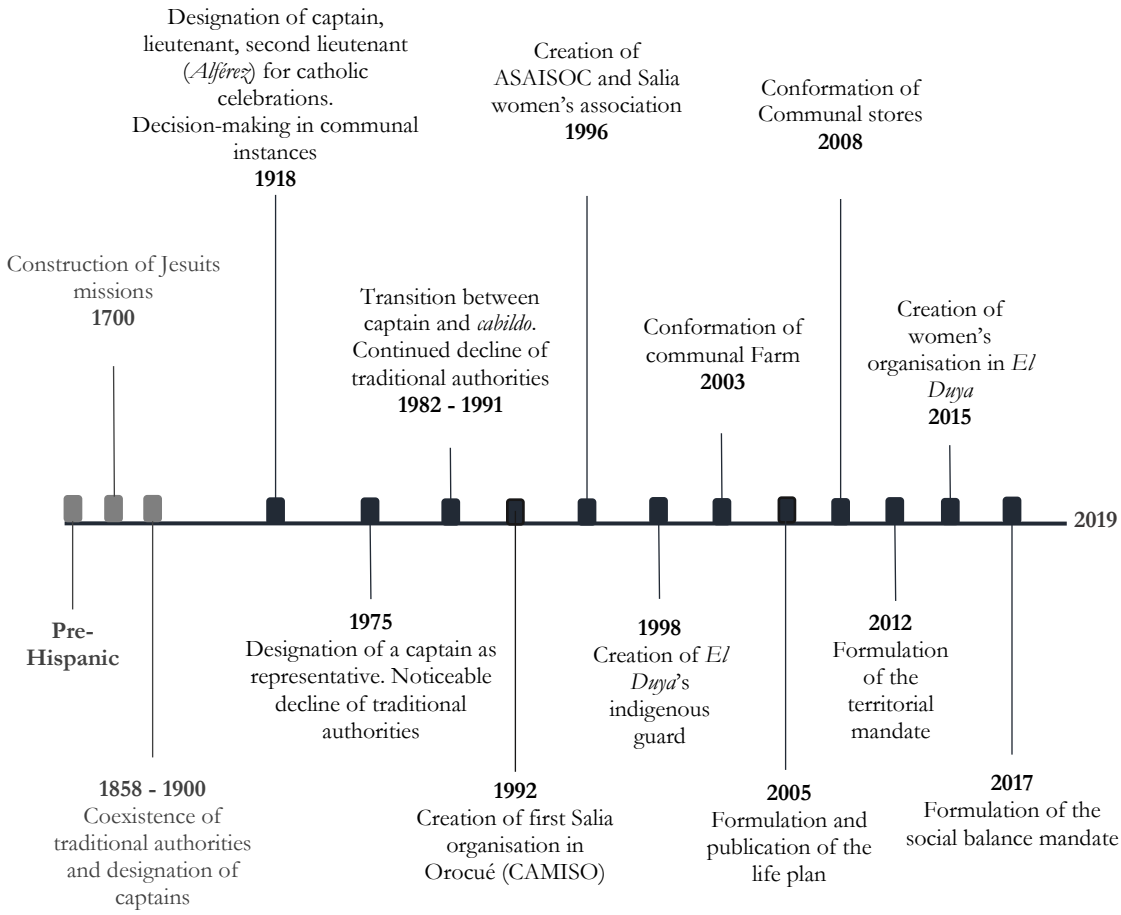
'The Salia people has a very comprehensive worldview. We say that it has no beginning and no end, that's why there is an image like something round and oval. (…) We human beings are part of nature. We communicate directly with her, her with us, she punishes us because of our wrongdoings. It does not mean that the Earth is bad, it is us who are bad, that is why it can happen. One gets sick, one has problems. That is because we do not ask for permission to Mother Earth. It is a rotation, one is born of a Mother, one is water, living beings' life is water from the start and go back to the Earth'. Salia man, *El Duya*[231].

Salia institutions have been transformed over time. Before the 20th century, institutions were crafted fundamentally according to Salia worldview; however, external factors have rushed their change. After the first contact with Europeans, the Salia people migrated from the Orinoco river to what today is Orocué in the late 18th century. However, Salia presence in what today is *El Duya* could be traced back to the late 19th century, when the elders Esteban Caribana and María Pónare settled between the streams *Duya* and *Ocumo*, now part of the *resguardo*.

Since then, several transformation processes have occurred in *El Duya*, which respond to three main sources of change: non-indigenous influences, municipal-level organisational dynamics and *resguardo*-level initiatives, which are summarized in Figure 8. Therefore, the analysis considers the trajectory from that period until present day and is organised into two periods. The first one corresponds to the period between the late 19th century and 1982, from the time in which the Jesuit missions were dismantled and the *resguardo* was created. The second period corresponds to the years between 1982 and 2019, after the titling of the *resguardo*.

[231] Fieldwork diary: May 13, 2018.

Figure 8. Milestones for institutions in *El Duya*



Source: author´s own compilation based on INCORA, 1978; Garzón Rodríguez et al., 2011; Morey and Morey, 1980; Pueblo Salia, 2005; 2011; fieldwork data. The illustration portrays the main milestones in institutional development in *El Duya*. Authorities, organisational structures, norms and plans are considered here to describe the transformations of Salia's institutional arrangements.

7.1 The period before the titling of the resguardo

Before 1982, the relation between Salias and the territory was mediated by institutions based on customs. When asked about the relation with nature[232], indigenous interviewees explained that, according to their worldview, nature or Mother Earth is a living being. This being can also be called 'the environment' and 'the territory' (Pueblo Salia 2012a). The Earth is

[232] A full description of Salia cosmogony and cosmology is beyond the scope of this dissertation. The relationship with the territory is approached through Salias' explanations obtained through interviews and documents, as well as through the available works made by the authors Nancy Morey, Robert Morey; Salomón Rivera, María Eugenia Romero Moreno, Andrea Garzón Rodríguez, Elizabeth Romualdo Lara, Blanca Rodríguez Riveros and Hortensia Estrada Ramírez.

considered as a mother and Salia individuals are part of her. Consequently, there is establish a conceptual separation between Mother Earth and human beings. According to Salia worldview, Mother Earth allows the birth of new-borns and such allowance must be requited through the devolution of the placenta and umbilical cord, which should then be buried in front of the baby's house. As well, they consider that their life commences and ends in Mother Earth, since the starting point of every human life is marked by the burial of the placenta and its termination is marked through the burial of the corpse. Furthermore, Salias' relationship with nature is based on respect and obedience to the Mother, who teaches her sons and daughters to have '*respect for the spirits of nature'* (Pueblo Salia 2012a, 26).

Salia worldview is sustained by a set of rules and practices that keeps the balance of life, which is conceptualised as the 'law of origin'. This term corresponds to a denomination of indigenous law frames which is common among Indigenous peoples of Colombia. The law of origin is orally transferred by elders to younger generations, which guarantees its persistence. This constitutes their customary law, which has been further developed through the concept of superior law[233]. Under the law of origin, returning the placenta constitutes the first rule that every Salia person should observe. Therefore, failing to comply is interpreted as an act of disrespect and a transgression of Mother's rules. The transgression is dangerous because it may bring negative consequences for the health of the new-born. Moreover, since Salias understand life as '*the balanced relationship of Salia man-Mother Earth'* (Pueblo Salia 2012a, 28); the transgression of rules has the potential to disrupt the balance that maintains life.

Salia customary institutions aim at keeping the natural order of life, which requires that transgression of rules, that is 'disorder' or 'imbalance', is rapidly addressed. Disorder is a matter of survival for the Salia people because it can menace their ability to obtain food, water and materials. As well, imbalance can directly affect their well-being, because of an ailment acquired as a punishment for a disrespectful behaviour. Within this frame, '*Saikwas'* plays a crucial role, which goes beyond healing, since they are the only ones who can restore balance. A *Saikwa* is a wise male who intermediates between humans and nature, through the use the seeds of *Yopo*, *Anadenanthera peregrina,* for ritual purposes (Morey and Morey 1980, 284; Ortiz Gómez 1989; Rodd and Sumabila 2011). *Saikwas* are the ones who know how to '*interact* w*ith the other beings*

[233] In Spanish '*derecho mayor'*. This conceptualisation contends that indigenous juridical frame is prior and superior to the European-based law, which renders impositions of the latter over Indigenous peoples juridically inappropriate, according to the lecture led by *Taita* Lorenzo Muelas in 2012 during a national forum of indigenous communication in Popayán, Cauca, Colombia. See: https://www.youtube.com/watch?v=_D38AUb0-4s. Other Indigenous peoples use the concept of 'natural law' (l*ey natural*); nevertheless, this terminology was not used by the Salias that were interviewed.

of nature' (Pueblo Salia 2011, 70) and they are able to translate information broadcasted by nature. They indicate the course of action for maintaining the balance in every aspect of life. This includes, for example the right time when an infant drinks water for the first time or the appropriate cooking practices to avoid sicknesses or miscarriages among women[234].

In addition to *Saikwas*, there are other roles such as botanic experts and recitation specialists, which are taken up by men[235], and midwives, which is fulfilled by men and women (Garzón Rodríguez and Romualdo Lara 2011). Nevertheless, only *Saikwas* have the faculty to heal (Pueblo Salia n.d.). Elders also contribute in keeping the balance, through their role in guiding their families in the observance of rules. Their interaction with nature is mediated through recitations, which are not of exclusive use of the *Saikwas*[236], therefore, Elders have some capacity to interpret nature's messages. Interviewees indicated that traditional doctors and recitation specialists asked other people to join rituals in order to teach those who were taking part of it. Nevertheless, attending and learning was voluntary[237]. Rituals can also involve dietary restrictions, observed by the sick person and the *Saikwa* or the one leading the ritual. Recitations are used to avoid danger emerging from nature[238], as well, they are used for pest control in crops and to protect livestock from predators.

According to Salia worldview, the territory is alive and corresponds to the body of Mother Nature. The territory is deemed as sacred, controlled by spiritual beings which can be found especially in some sites where they have their houses. These are called sacred sites and cannot be accessed freely, since they require of *Saikwa*'s mediation and/or the practice of a ritual. There are several types of sacred sites, which are listed in Table 18. None of the interviewees referred to an absolute prohibition of accessing these sites; nevertheless, they did explain that some of them are kept hidden from foreigners through the use of recitations. These sites usually correspond to places where wildlife finds refuge, most of them in remote areas.

---

[234] Fieldwork diary: May 16, 2018. Further elements were mentioned such as the rules for menarche; children upbringing; interpretation of dreams, among other elements beyond the scope of this research.
[235] It is not possible to determine whether Salia customs explicitly forbade women taking up these roles. However, information obtained from interviewees and secondary sources makes no reference to women.
[236] Fieldwork diary: May 13, 2018; May 16, 2018; June 11, 2018.
[237] Fieldwork diary: May 03, 2018; May 16, 2018.
[238] For example, speaking recitations before starting a journey would protect the traveller from encountering animals in the way, such as snakes, rays (*Potamotrygon sp.*) or *giíos* (*Eunectes murinus*).

Table 18. Sacred sites in *El Duya*.

Site	Sacralizing criteria	Rules	Consequences of transgression
Cemeteries	Remainings of the ancestors	Prohibition of disturbance of any kind	Risk of illness
Forests	They are the house of animals, the domain of the spirit of the forest.	Acces and extraction without permission is forbbiden Rituals and/or recitations must be performed before hunting	Risk of illness Failure in hunting Getting lost Numbness or stiffness in limbs Risk of illness
Morichales	They are the house / domain of the spirit of this palm community	Acces and extraction without permission is forbbiden	Risk of illness
Abandoned housing sites	Buried material or symbolic inheritance from the ancestors; placentas and umbilical cords of former inhabitants, buried in front of the house's main entrance.	Prohibition of disturbance	Risk of illness
Sites from where the rainbow emerges	The rainbow (*'Jaano' or 'Yalibili'*, translated as 'water snake') According to their cosmogony, the rainbow appeared after a snake formed an arc (bow) over a lagoon. The rainbow controls rain and is feared for its power to produce diseases.	People should not point the finger towards the Rainbow People should avoid being touched by rainbow's water/urine	Development of ulcers in the finger Illnesses triggered by touching the water
Savannas	Habitat of animals and medicinal plants. House of the spirit of *topias*.	People may access and extract with proper permission	Risk of illness
Water bodies	They are the house of water people or spirits called '*Fainodi*'. They are the places were fishes are found.	Acces and extraction without permission is forbbiden Rituals and/or recitations must be performed before fishing Looking at certain places is forbidden	Fishing is hindered Occurrence of extreme phenomena (vortexes; storms) Risk of illness Risk of accident

Source: author's own compilation based on information obtained while conducting fieldwork; Pueblo Salia (2012a; 2012b); Pueblo Salia and Estrada Ramírez (n.d).

Access to sacred sites is possible only after asking for permission to the spiritual being which exerts domain there. Sacred sites are usually associated with wild species acting as guardians.

Large reptiles such as *Eunectes murinus*; C*aiman crocodilus fuscus* and *Crocodylus intermedius* are the guardians of lagoons, *madreviejas*, *esteros* and *caños*. Rays are also guardians in the latter. According to Salia worldview, these animals can transform into humans and can be the physical manifestation of the spiritual being who exerts domain over the site. The trespassing of sacred sites without permission produces dire consequences, which range from bodily discomfort to life threatening situations. Failing to comply with the rules even after asking for permission has negative consequences which may increase depending on the type of transgression. For example, once fishing is allowed, having problems with the gear should be interpreted as a signal to stop. Neglecting these signs may have more serious consequences, such as diseases or life threatening experiences. In contrast, if requirements are met and no negative sign is identified, activities can be carried out without worry. According to most interviewees, water bodies are especial sacred sites and some prohibitions have been developed specially for women, who are not allowed to approach these sites when they are menstruating.

The spatial expression of the relationship with nature has also been influenced by the distribution of Salia families in the territory. It is difficult to determine how Salia clans were organised in the early years of contact with Europeans (Morey and Morey 1980*,* 247); however, three levels of leadership have been identified: family leaders, captains and chiefs (p. 280). According to the interviewees, at some point between the dismantling of Jesuit missions and the decade of 1950, the area of *El Duya* was controlled by a family leader, Heliodoro Caribana Pónare, who tried to acquire legal recognition as tenant in 1958. This man later distributed this area among his sons and daughters, who later constituted family units with a male leader, part of the Caribana clan. It is likely that Heliodoro acted as a captain in relation to non-indigenous people; however, each Salia clan had its own leader[239]. By 1975, there was no clear organisational structure, according to the legal act through which *El Duya* was constituted as a reserve. This document describes it as *'something informal (…) there is someone of prestige who becomes the representative of the group when necessary. Nevertheless, whenever a decision is important and concerning everyone, the majority of people take part'* (INCORA 1978, 2). That prestigious figure used to be the Captain, a role exerted then by one of Heliodoro's grandchildren, Julián Caribana Pónare, who was the leader of the process of the creation of the reserve and later the *resguardo*. Nevertheless, the figure of the Captain is currently extinguished in *El Duya*. In addition to the Caribanas, other Salia clans exerted control over a larger territory than what was bounded as

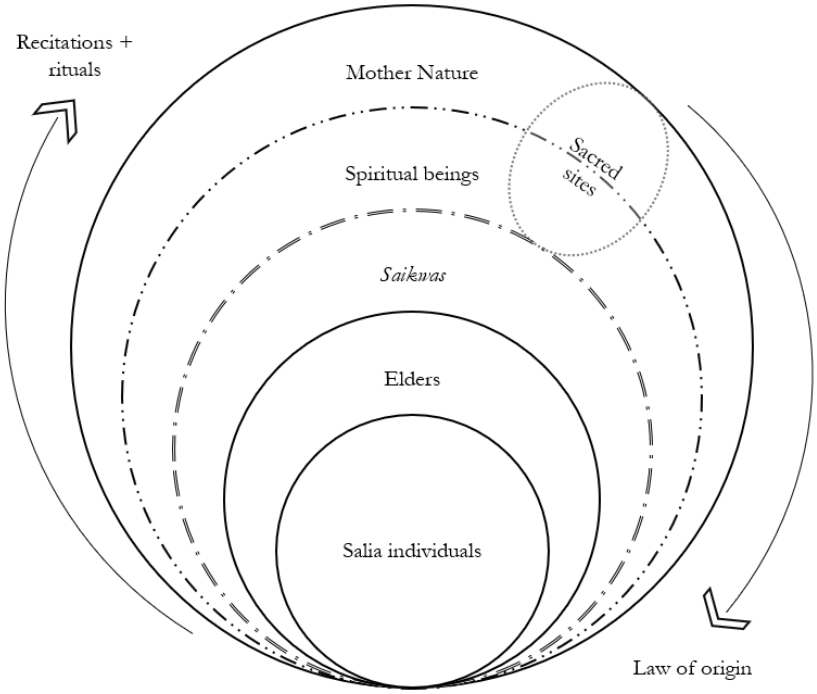
[239] According to the information about the words 'governor' (gobernador) or 'ruler' (gobernante) available in the Salia dictionary, 'Salia elders affirm that they had no rulers because they did not live close to each other, like nowadays. They lived away from their relatives and the ones who ruled were parents and grandfathers' (Pueblo Salia and Estrada Ramírez n.d.).

El Duya, which Salias refer to as their 'ancestral territory'. The extent of the area controlled by each clan is unknown.

7.1.1 Salia customary rules

Salia customary institutions have been structured as a result of the interaction of nature in any of its manifestations (e.g. rocks, soil, plants, animals or spirits); recitations in Salia language; rituals, and humans. This structure is represented in Figure 9. Salia individuals and elders' interaction with nature has more defined boundaries than *Saikwas'* interaction with nature, where boundaries are porous. Nature interacts with humans as a whole, the mother or the territory, and as multiple discrete entities represented by spiritual beings with a particular name and special characteristics which are found in sacred sites, which have a dual condition of physical and spiritual spaces.

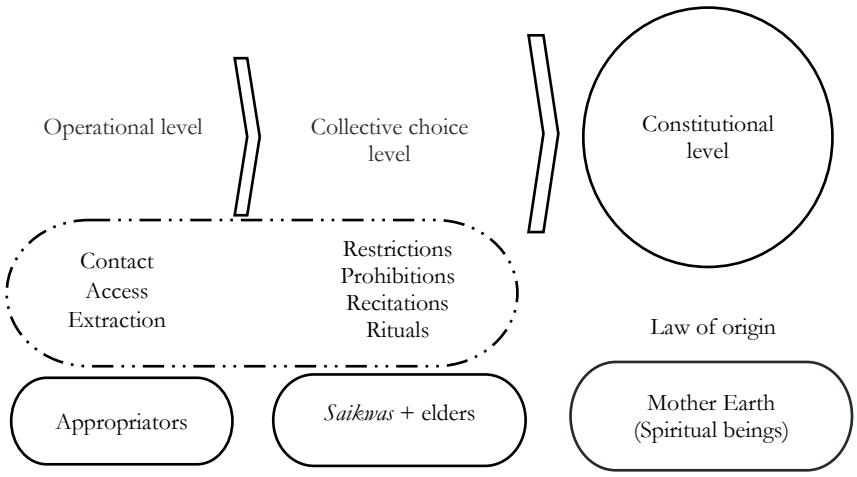
Figure 9. Salia customary institutions prior to the *resguardo*



Source: author's own compilation. The illustration outlines an interactional frame in which the law of origin and the observance of rules, recitations and rituals, guarantees that balance is maintained. Solid lines mark fixed boundaries, while dashed and dotted lines mark permeable boundaries. The position of the Saikwa represents his role as intermediary.

According to Ostrom (1990), rules should be analysed according to their level: Constitutional, collective and operational, which are depicted in Figure 10. In Salia customary institutions, the constitutional level corresponds to the law of origin, which establishes the order of the world and how decisions should be made. According to Kaiser and Ostrom (1982), *'collective decisions are made by officials to determine, enforce, continue or alter actions authorized within institutional arrangements' (…) officials have the power, however, to enforce a collective plan (…) the authority to impose sanctions is a key attribute of the collective-choice level of decision making'* (p. 76). However, it is not possible to demarcate the collective level of customary institutions. In these institutions, authority is exerted by elders and *Saikwas;* nevertheless, their leeway to decide and enforce depends on the law of origin and what is mandated by nature. Therefore, collective decisions are made by elders and *Saikwas* with the possibility to consult nature in a situation of uncertainty; while actions related to the constitutional level require of mandatory consultation with nature, which can only be performed through *Saikwas*.

Figure 10. Rules in Salia customary institutions according to each level



Source: author's own compilation. Rules at the operational level prescribe how appropriators can establish contact with, have access to and extract from ecosystems. Rules at the collective level include the prohibitions, restrictions and prescriptions regarding rituals and recitations, which are enforced by *Saikwas* and elders. Rules at the constitutional level correspond to the law of origin, which determine the prescriptions at the other levels. Mother Nature enforces rules and imposes sanctions for all levels.

The operational level corresponds to the way in which individuals interact with nature. In customary institutions, this includes more than decisions '*to withdraw resource units*' (Ostrom

1990, 52) and covers all spheres of life[240]. Since transgressions are understood as causes of human disease and misfortune; potential transgressors are deterred from overseeing restrictions. According to Kaiser and Ostrom (1982) what makes the operational distinct from the other two levels of decision making is '*the role of implementation and enforcement'* (p. 77), since individually-imposed regulations cannot be enforced by external actors. Therefore, '*collective decisions are enforceable against nonconforming individuals*' (p. 76). In the customary arrangement, elders and *Saikwas* are entitled to enforce rules conforming to the law of origin; however, sanctioning is reserved for Mother Earth. For example, an elder can decide to forbid the entrance to a '*Madrevieja',* so no one but him or her can fish. This restriction is possible through the use of adequate recitations to keep the place hidden and to guarantee exclusive entrance. Nevertheless, this person, who possess privileged access and control over the site, could be punished by Mother Earth if extracted too much fish.

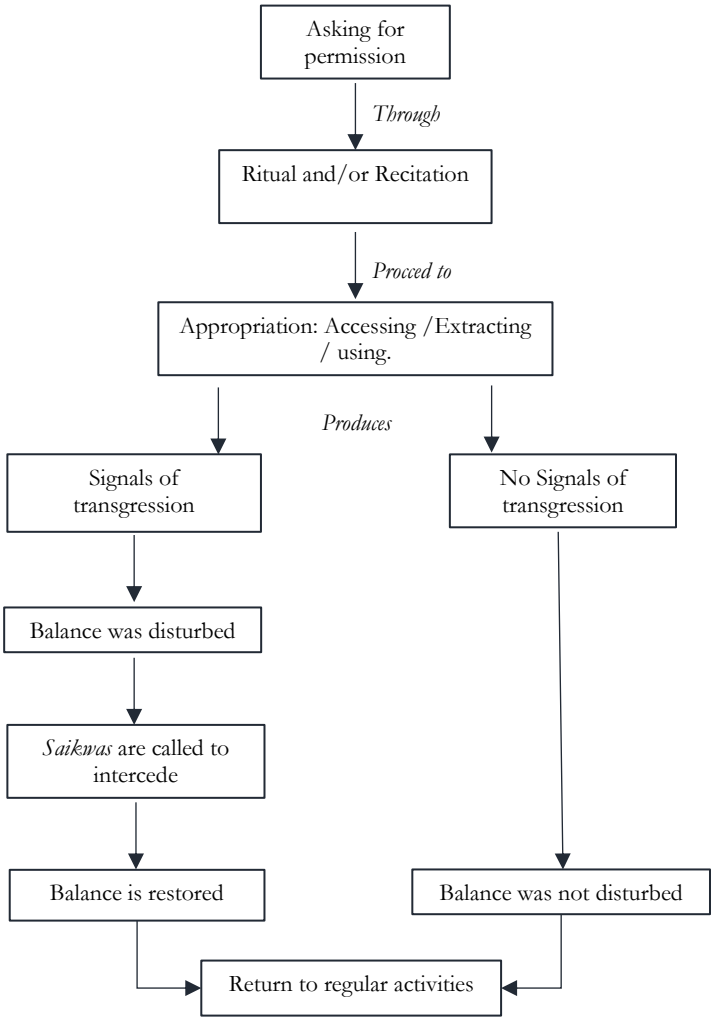
Individual appropriators can take part in collective decision-making and *'undertake the actions authorized by the collective decision'* (Kiser and Ostrom 1982, 77). In the customary arrangement, individual's participation is limited to their family units, where authority is vertically exercised by elders. Therefore, individual's participation in collective decision-making corresponds to the gathering of elders who are heads of family units, not the whole population. Furthermore, constitutional-level rules are beyond everyone's reach. Salia customary institutions are characterised by highly stable rules, where those who can appropriate resources are clearly identified, allowed practices are clearly established and rules are known by all of the actors involved. However, there are not fixed quantities that limit appropriation. Users are expected to take only what they need to supply themselves; while nature will provide warning signs if the appropriation has exceeded the limit. As well, *Saikwas* are entitled to provide indications for harvesting rates. Hence, monitoring structures do not appear to be necessary, as the system itself provides signals of disruption, that is, when rules have been transgressed. Furthermore, sanctions are not imposed by a human authority. It is Mother Nature herself who imposes sanctions and *Saikwas* act as intermediaries to prevent or mitigate the consequences of the transgression of rules.

Customary institutions in *El Duya* are characterised for covering every aspect of the appropriation of ecosystem's components, all of which are restricted at some extent. Appropriation is restricted by the access to and use of privileged knowledge in the form of

[240] For example, the glance of landscape might be regulated if there is a rainbow, which limits subsequent behaviours as long as the rainbow is visible, as discussed concerning sacred sites.

recitations in Salia language and specific rituals, as well, it is made according to standardized procedures, which are summarized in Figure 11. Nowadays, appropriation according to this procedure is observed mainly by older people, who still know and value the rules. Interviewed elders explained that Salia customary institutions are going through a process of decay in favour of arrangements that do not fully incorporate the law of origin. Nevertheless, Salia customary institutions have not disappeared from *El Duya*.

Figure 11. Procedure for appropriation under customary institutions



Source: author's own compilation. All sorts of appropriation require of asking for permission to Mother Earth through the use of rituals and/or recitations. In every case, signals of disturbance of balance must be identified before resuming day-to-day activities. It should be noted that customary institutions prescribe every aspect of life, therefore, even regular activities could be considered as responding to rules. However, this illustration emphasises the procedures for benefiting from ecosystems and their components.

7.1.2 Design principles in the customary arrangement

According to Ostrom (1990), successful institutions are those which '*enable individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present*' (p. 15). Using the design principles to analyse customary institutions in *El Duya*, it seems that they meet most of them, as shown in Table 19. These institutions are fully characterised by five of the principles (1a; 1b; 2a; 6; 8) and partially by three of them (3; 5; 7). However, Principle 4a and 4b are absent.

Table 19. Design principles in Salia customary institutions.

Design principles	Salia institutions
1.a User boundaries	Prior to the arrival of non-indigenous persons, all Salia individuals were considered as legitimate users. Early migrants were also considered as legitimate users, as the first families were allowed to live and appropriate resources there. The emergence of conflicts linked to land encroachment by foreigners removed the legitimacy of the latter.
1.b Resource boundaries	Before the bounding of the reserve, there were no clear boundaries that could be defended from external appropriators, neither physically nor juridically. However, the boundaries of Salia territory were clear for the Salia people and corresponded to the traditional or ancestral territory. The Colombian state and non-indigenous immigrants did not recognise such boundaries.
2.a Congruence with local conditions	Appropriation rules respond to Salia worldview, considering nature as a respected being. As well, they respond to the type of ecosystems found in *Orinoquia* region, which are dominated by wetlands. Provision rules correspond to elements that, according to Salia Worldview, guarantee the continuation of natural balance, which starts with the retribution of the placenta and continues with the observance of customary rules.
2.b Appropriation and provision	Since humans are considered to be part of Mother Earth instead of separate beings; compliance of rules is not a matter of proportionality. Rules maintain the balance or the law of origin, which guarantees the life of nature and Salias at the same time.
3. Collective-choice arrangements	Regular individuals participation in decision-making is limited. Elders can deliberate regarding the modification of operational rules; nevertheless, modification of rules altering the law of origin is not possible for individuals nor authorities.
4a. Monitoring users	There is no formal monitoring as transgression of rules result invariably in the disruption of the balance, informing thus about non-compliance.
4b. Monitoring the resource	The distinction between monitoring users and resources is not necessary, since both are interconnected and the state of one informs about the other.

5. Graduated sanctions	Authorities are not entitled to establish sanctions. The Eart -system- reacts to transgression and imposes sanctions, which are gradual according to the severity of the offense.
6. Conflict-resolution mechanisms	Conflict resolution is settled by elders and Saikwas, who can easily meet and deliberate.
7. Minimal recognition of rights to organise	Salias' customary organisation has been crafted by them. Nevertheless, they have been challenged by external governmental authorities through the promotion of land encroachment in Salia territory. Moreover, the negligence in prosecuting violence against Salias, lack of recognition of Salia institutions; imposition of Spanish language and catholicism overt Salias constitute further challenges.
8. Nested enterprises	Salia customary institutions are composed of multiple layers that include the individual, the collective of humans, nature as a living being and the frame of the law of origin which determine appropriation.

Source: author's own compilation based on Ostrom, 1990; Cox et al., 2010.

According to these findings, Salia customary institutions seem to have maintained the functionality of the resource systems for a century. In the absence of available data to assess the state of ecosystems during that period; the functionality is indicated by Salias' ability to develop their livelihoods in these ecosystems without significant transformation of natural ecosystems[241]. The following section discusses the changes in customary institutions linked to the creation of the *resguardo* and the emergence of new pressures over ecosystems.

7.2 The period after the titling of the *resguardo*

By the beginning of the decade of 1990, an organisation with the eight *cabildos* of the *resguardos* of Orocué was created, which suggests that the *cabildo* of *El Duya* was constituted at some point between 1982 and 1990. After the titling of the *resguardo* in 1982, indigenous institutions were crafted under different organisational structures than those in place under the customary frame. However, it would be inaccurate to claim that these institutions are no longer based on customs. These institutions are called here 'novel' in order to distinguish them from customary institutions.

[241] According to Romero-Ruiz et al. (2012), '*up to 1970, only 2 % of the Llanos Orientales had undergone some kind of LUC transformation*' (p. 772), which supports this argument. These authors affirm that large transformations began during the decade of 1980.

7.2.1 Organisational structures

The current composition of the Salia *cabildos* is made according to the social balance mandate issued in 2017, which indicates that a *cabildo* should be conformed every year by a governor, a vice-governor, a secretary, a fiscal controller, a treasurer and a spokesperson. In *El Duya*, the *cabildo* includes two spokespeople. As well, there are other structures in this *resguardo* which are not regulated in the social balance mandate, which can be observed in Figure 12. However, the mandate does regulate two more instances: The council of justice and the indigenous guard. The council is formed by two inhabitants of the *resguardo* for a four-year period. The counsellors are chosen in the general assembly by unanimity instead of voting and the council does not deliver justice, as this is reserved for the assembly. Its function is to provide counsel whenever a situation of social unbalance takes place, as well as to conduct the follow-up of the sanctions decided by the assembly. The counsellors of each *resguardo* hold meetings with their peers, whenever they consider it necessary. The fiscal controller also watches over the compliance of the due process whenever an investigation takes place. The fiscal controller, although considered part of the *cabildo*, is regarded as '*an institution of communal surveillance and control over every aspect of the cabildo's activities'* (Pueblo Salia 2017, 36).

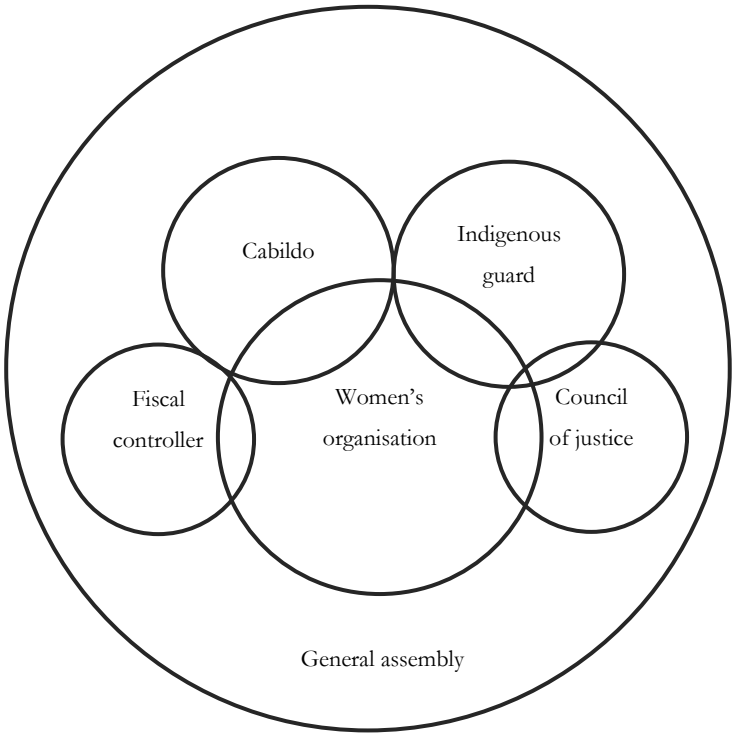
The indigenous guard is a group of women and men, whose role is to *'look after the territory and the culture'* (Pueblo Salia 2017, 40). In *El Duya*, the indigenous guard has 37 voluntary members[242], who are identified by a vest and a command stick with the shape of an arrow. Nevertheless, indigenous guards do not carry weapons. Immediate orders for the guards are given by the governor or someone appointed by him/her. The internal organisation of the guard has no vertical chain of command. There is a coordinator, a secretary and a treasurer. All members are organised in three groups, each one with a coordinator, who assist the general coordinator in the organisation of tasks, such as the programming of shifts. As some members of the guard are elders whose opinion is highly valued, there is no absolute authority exerted by the general coordinator, nor the governor. According to the interviewees, current organisational structure of the guard will change as soon as a permanent structure is devised through a Manual that is being designed.

Finally, there is an organisation created by the women of *El Duya,* which began as an association conformed during the decade 1990, supported by 'CECOIN', a non-governmental

[242] The interviewees indicated that the guard was created in 1996. Nevertheless, the life plan (2005) refers to a structure formed by agents called '*alguaciles';* instead of guards, which was led by the *Saikwa*. The life plan update of 2011 does refer to guards and '*alguaciles'* in some of the *resguardos*, including *El Duya*.

organisation (CECOIN 1998). In 2010, it was transformed into an organisation which had 90 members, that is 58 % of all women over 18 years living in the *resguardo* in 2018. The members of the organisation corresponded mainly to women dwelling in the area of *Piñalito*. Another organisation was formed in the sector of *Cucurital*, which is currently non-active. The women's organisation of *Piñalito* allows the participation of any woman; however, no woman from *Cucurital* was taking part of it during the period of study.

Figure 12 Organisational structures in *El Duya* after titling



Source: author's own compilation. The general assembly includes the members of all the organisational structures found in *El Duya*. The intersections between circles indicate that individuals can take part of the intersected organisations at the same time. Women's organisation is the one that allows more frequent intersections.

Women's organisation is structured in a similar way to the *cabildo,* with a president, a secretary, a treasurer, a spokesperson and a fiscal controller, who are selected for a one-year period. The general women assembly is the ultimate decision-making body[243]. It is constituted by women

[243] Interviewees made no reference to external influence for the creation of women organisations. However, a report published in 1998 by the NGO CECOIN states that they had a handicrafts project with the Salias of Orocué which started in August 1991. See: CECOIN (1998) cited in this dissertation.

only; however, men are welcomed in the general assemblies, where they can deliberate. This organisation is exclusively concerned with the administration of the communal grocery store and a small cattle herd, which is usually handled with the support of men. Every January, members gather to decide about the products that will be commercialized in the store. Then, they meet every two months to review the store's finances and discuss activities for the short term. The members of the retiring organisational structure are accountable to the general assembly, for which they present an annual report of their activities.

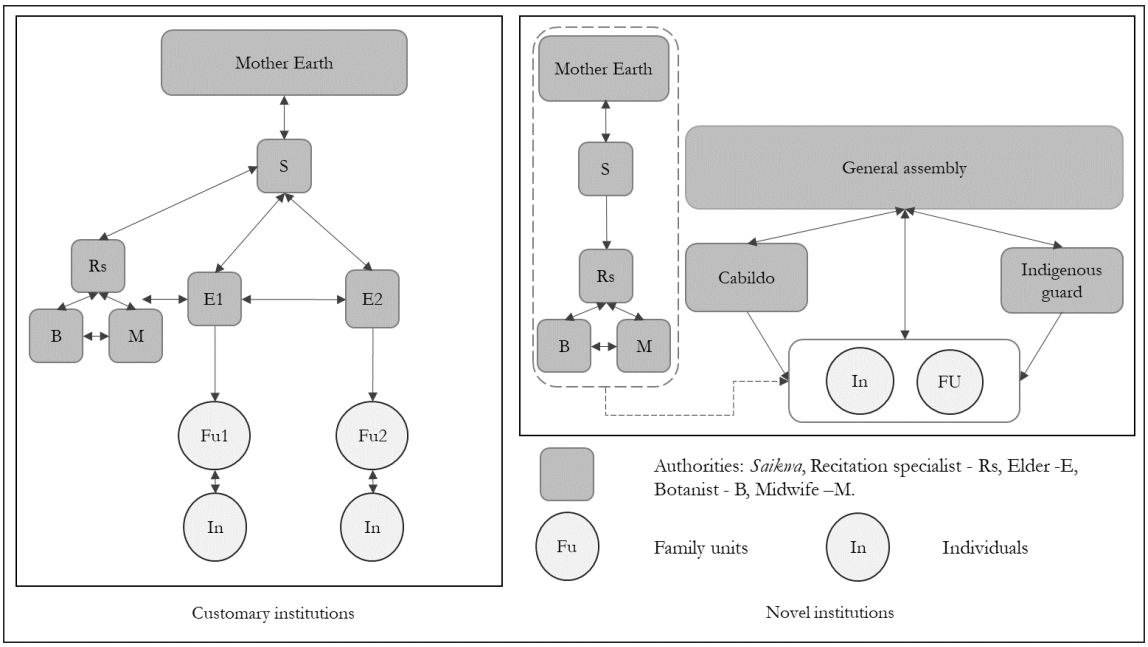
7.2.2 Authorities in *El Duya*

Using the concept of 'authority relations' (Larson 2010), there are three types of interactions to be considered: people of *El Duya*-indigenous authorities; people of *El Duya*-State; and indigenous authorities-State. In this chapter, the first type of interaction is discussed, while the other types are covered in chapters eighth and ninth. If authorities are conceptualised as those entitled to make rules, the analysis requires of understanding the contrast between authorities based on custom and novel authorities.

Salia custom indicates that rules are made according to the law of origin, where Mother Earth is the ultimate source of authority. *Saikwas* communicate and interpret rules and Elders, botanists, specialists and midwives recreate these rules by watching over their correct implementation. Moreover, the exercise of authority following Salia customs is based on hierarchies determined by knowledge: an older person knows better than a younger person, but an elder could not contradict a *Saikwa* even if he was younger. Elders constitute the highest authorities of their family units and would meet with other elders in order to deliberate on matters of common interest; however, no centralized government exist under this scheme. Other authorities are summoned according to specific needs. Under Salia customs, once a person acquires the status of authority, he will retain it indefinitely; however, authorities need to comply with at least four requirements. The first is the knowledge about rules, that is, what is allowed and forbidden. This requirement must be met by all types of authorities. The second corresponds to the knowledge of recitations. This knowledge is directly linked to the authority hierarchy, where the most knowledgeable authorities would correspond to the *Saikwa* and recitation specialist, as shown in Figure 13. However, other authorities' knowledge may vary. The third corresponds to reputation, that is, what others think about the person who has an authority role, which depends on how this person fits to what is socially considered as

appropriate and the tasks that the authority is expected to fulfil. The fourth corresponds to legitimacy, that is, whether authorities comply with the requirements established to access and hold their roles. Current customary authorities face constraints concerning these four elements, which create negative feedbacks among each other. The fact that all authority roles currently exist, except for the *Saikwa,* introduces a constraint for customary institutions due to the loss of knowledge concerning rules and recitations. Moreover, the knowledge among other remaining authorities diminishes as elders pass away, in the absence of effectively transference. Then, the performance of remaining authorities is affected by their inability to access the tools they used to have with *Saikwas*, which affects their reputation and the likeliness of finding younger people interested in their knowledge. Finally, the erosion of knowledge about rules and recitations obscures the mechanisms of selection and evaluation of authorities

Figure 13. Customary and novel authorities in *El Duya*



Source: author's own compilation. The exercise of authority is more restricted in customary institutions, which have a more vertical structure than in novel institutions. The novel arrangement introduces new authorities and places individual and family units at the same hierarchical level.

In contrast, the novel arrangement introduces authority exercise through a central body, the *cabildo*, and the governor, as a member, is entitled to act as representative of *El Duya*. This central government has been established to rule over all family units and individuals dwelling

in the *resguardo*. However, the highest instance for the exercise of authority is the general assembly. Decisions made in this instance may result from consensus or voting, depending on the what the participants agree. Under the new arrangement, all Salias registered in the annual *resguardo*-level census are allowed to take part and deliberate in the general assembly. Potential governors must have prior experience as *cabildo* members in order to be eligible. As well, the members of the *cabildo* are selected preferably among those who have taken part of other organisational structures, including those from the school for younger people. Therefore, age is no longer a prerequisite to have an authority role in contrast to customary institutions. In the case of indigenous guards, all Salias are eligible as long as they are not children. Currently, it is not clear how both institutional arrangements interact in terms of authority, which is at the core of the institutional transformation in *El Duya*. Recently, a member of the *cabildo* of *El Duya* initiated his training as *Saikwa*, which indicates an effort to strengthen customary institutions; however, no clear tendency can be observed.

The transition towards current governing bodies was relatively swift, considering that in a period of 10 years the Salias of *El Duya* already had a functional *cabildo* structure. This can be explained by the experience gained through the peasants' association in place before the reserve was created. This structure required that Salias would become part of the organisation, which had a very similar structure to the one that the *cabildo* has today, with a president and a group of persons fulfilling distinctive roles. The president of that peasant organisation in *El Duya* was assumed by the 'captain'; who was a respected family leader and experienced person and held this position for several years. In contrast, subsequent presidents and then governors did not always fulfil the cultural requirements for being perceived as a legitimate authority, in terms of experience (age and knowledge) and reputation. People that later started to take part in the *cabildo* also lacked these legitimacy criteria.

In the customary structure, the exercise of authority is characterised by a hierarchical distancing between authority figures and individuals. The new arrangement, in contrast, allows more people to assume the role of authority at some point in their lives; while the customary arrangement reserves authority roles for a small group of people, mainly elders. Table 20 contains a comparison between the two institutional arrangements concerning authority features. Furthermore, the new arrangement has caused a fissure in the organisational structure based on family units and at the same time, it has broadened the scope for women to exercise authority. Nevertheless, the emergence of these new authorities, even if legitimate under the

new institutional arrangement, does not grant them respectability, which is necessary to reduce opposition and conflicts.

Table 20. Current features of Salia authorities.

Criteron	Customary arrangement	Novel institutions	Mutual exclusion
Leadership	Formerly exerted by elders, currently absent	Limited by knowledge and organisational constraints	No
Decision-making	Formerly made by elders, currently absent	Exerted by the community in the general assembly and by governing bodies, with limitations from central government.	Yes
Accountability for nature's state	High among those who still observe customary rules	Limited by legitimacy issues and organisational deficiencies	No
Trust	High among those who still observe customary rules	Highly contested, dependant on individual opinions	No
Reputation	High among those who still observe customary rules	Highly contested, dependant on individual opinions	No
Respectability	High among those who still observe customary rules	Highly contested, dependant on individual opinions	No
Rule's enforcement	Made by elders and Mother Nature	Partially implemented through governing bodies	No

Source: author's own compilation.

Another aspect in which the new authorities seem to have problems is related to the enforcement of rules. Currently, there are no clear procedures through which *resguardo* authorities should enforce rules, nor means to do it (technology, staff, information and financial resources). The comparison between arrangements suggests that most of the traits of customary and new authorities in *El Duya* do not interfere with each other, except for leadership. According to indigenous interviewees, the strengthening of Salia institutions in the recent history of *El Duya* has been fostered by crucial leaders. The creation of the *resguardo,* for example*,* was led by the captain Julian Caribana Pónare, who wrote a memorial that initiated the process of requesting land demarcation and titling[244]. Women leadership, however, is less visible in the history of the *resguardo*. Many of them were also involved in the territorial struggles of the time, taking care of the households of those men who were in charge of the interaction with governmental institutions. Currently, women participation in the *cabildo* and the

[244] Other leaders followed his initiative: Timoteo Horopa, from the *resguardo El Suspiro*, as well as Máximo Errenumá, Pedro Enrique Pónare, Germán Guacabare and Gabriel Guacabare.

indigenous guard is common; nevertheless, they hardly maintain leadership and authority positions[245]. Since women retain domestic labour responsibilities, those who acquire responsibilities outside their homesteads tend to have conflicts with their husbands.[246]

Leadership in *El Duya* is assessed by some interviewees as absent or weak[247]. Nevertheless, different types of leadership were observed during the prior consultation meeting held in the *resguardo*. The members of the *cabildo,* mainly the governor*,* played a key role in the negotiation pushing for the interests of the people of the *resguardo*. As well, some young men of the audience spoke several times pushing to impose their points of view, which ended up influencing the final agreements. Finally, a respected man was given the opportunity to talk, who put forward the necessity to widen the discussion from individual benefits to communal ones. As well, the arena was used by a counsellor of the traditional Salia authorities association of Orocué (ASAISOC) to confront the staff of Corporinoquia regarding the lack of implementation of the territorial mandate; although there was not a positive answer regarding the possibility to receive funds for the mandate's projects. Hence, leadership in *El Duya* is diverse and diffuse.

Considering that both institutional arrangements coexist and are only opposed in relation to leadership, it appears to be that both arrangements are complementary; nevertheless, the most recent ones are predominant over the customary in terms of the exercise of power. Currently, sacred sites are not always recognised; while some of them are currently located in non-indigenous properties. Surviving elders exert limited authority and their involvement in decision-making through the assembly, is not different from that of other *resguardo*'s dwellers. Moreover, no one among the eight Salia *resguardos* of Orocué can fulfil the role of *Saikwas* as they traditionally did. Therefore, the main communication channel that Salias had with Mother Nature has been severed.

The customary procedures for maintaining/restoring balance are currently not available in *El Duya*. Nevertheless, recitations used to communicate with Mother Nature are still known and used by some of elders who still observe customary rules, in addition to efforts to recover the role of the *Saikwa* and to safeguard Salia language are being made. Therefore, it is possible to

[245] Fieldwork diary: May 3, 2018. Currently, three women of *El Duya* have this type of position: Clara Guacabare is a counsellor of ASAISOC; while Edelmira Pónare and Martha Irene Renumá act as representatives of ASAISOC in regional indigenous instances.
[246] Moreover, informal conversations during the time spent in the *resguardo* indicated the presence of several forms of gender violence, which affect women the most. As well, during the second part of the stay there was a case of physical violence against a woman in which an investigation was initiated against her husband.
[247] Fieldwork diary: May 3, 2018; May 12, 2018; June 9, 2018; June 11, 2018.

affirm that, even though this long-time held customary institutional arrangement is going through a decay process, it has not fully disappeared. This indicates that Salia institutional arrangements in *El Duya* are currently under an institutional change process whose outcomes have not yet been refined.

7.2.3 Rules for natural resources appropriation

With the creation of the *resguardo* in 1982, the appropriation of Natural resources inside its boundaries occurs under a frame of collective property rights over land. These rights include the right to use forests, savannas and wetlands. Nevertheless, subsoil resources are owned by the State. Infrastructure such as sports facilities or water distribution systems are collectively owned. Houses are considered as collectively owned, even if permanently occupied by a family. According to the interviewees, if the communal assembly decided that the family should move out to another house, the family would have to comply. Nevertheless, this seems to illustrate the character of collective property that the *resguardo* entails, rather than constitute an actual practice. Likewise, plots for cultivation and grazing already assigned to a person or family, could be assigned for someone else if decided by the assembly.

The resources found above ground within the boundaries of the *resguardo* are subject of communal management. This includes flora, terrestrial and aquatic fauna, soil and above ground water. The dwellers of *El Duya* are entitled to usufruct these resources according to their internal regulations; nevertheless, land use must comply with the constitutional mandate of social and ecological function of property. Therefore, there are restrictions for indigenous management which are further analysed regarding the second specific research question. Finally, elements circumscribed to households such as personal accessories, furniture, vehicles and farm animals are considered personal property. Crops and cattle extensively held are also considered personal property. The following sections contains the analysis of the institutional arrangements for the management of *resguardo*'s resources.

7.2.3.1 Constitutional-choice level

El Duya takes part in multiple-level networks, as discussed in section 6.5.6. The constitutional-choice processes correspond to the network that the indigenous association of Orocué (ASAISOC) and its rules. Constitutional rules are expressed in the life plan and the documents

formulated for its development, the mandates. The Salia people of Orocué enacted their life plan in 2005 and called it *'sueños de pervivencia'* (dreams of persistence), which is analysed as part of the second research question. This plan has been further regulated through 'mandates', which correspond to a set of orientations for a particular domain. According to the Salia people, a mandate '*contains advices, order, justice and balance, that is why this mandate is understood as the order that we give for one another to be complied with and to enforce whenever outsiders are involved'* (Pueblo Salia, 2012). Since 2011, Salias have developed mandates for education (education mandate); territory (territorial mandate); health (intercultural health mandate); food sovereignty (nutritional and food sovereignty mandate) and social life and justice (social balance mandate). Under this frame, each *resguardo* is entitled to develop their own governmental structures, agenda and internal regulations.

Environmental sustainability is addressed in the five mandates at some extent; nevertheless, this mandate is the most comprehensive one. The formulation of the territorial mandate was the result of the Salia people harnessing the opportunity that appeared when the regional environmental authority, Corporinoquia, promoted the formulation of an indigenous environmental agenda, an instrument further discussed in relation to the second specific research question. In the case of the Salia people of Orocué, they transformed the environmental focus of the agenda into a territorial planning instrument. While the updated life plan refers to the formulation of a social balance mandate, which was finally enacted in 2017; no indication is made about the potential to develop an instrument such as what became the territorial mandate in 2012. Salias define territory as:

'a living being which keeps the laws of origin that regulate the order of the nature of life and ancestral knowledges. The territory is an integral world, not merely the soil that we step on but what is above us, that is, space with its magnetic spectrum, the air, the clouds, the gods, surface and ground water, finally, the set of variables found below and above the soil and in air space, all of them constitute the territory, which is also called 'Mother Earth'' (Pueblo Salia 2012, 29).

This definition states that the territory *'is not merely the resguardo that was titled by the INCORA, is something so broad that we cannot delineate it because it is impossible for our worldview to stablish limits for sacred and spiritual goods'* (p. 29). Thus, Salias make explicit the crucial concern of the mandate regarding the recovery of their ancestral territory and their ability to exercise authority beyond *resguardos*. The mandate further outlines the constituents of Salia territory and provides a classification that typifies sacred sites. However, it does not stablish norms nor provides explicit recommendations regarding its application in each *resguardo*.

Finally, the mandate indicates that conducts against territorial balance and harmony are considered as infractions, regardless of their occurrence either inside or outside of the *resguardos*. The typified infractions correspond to pollution of water bodies; overuse or waste of water; indiscriminate burning of the savannas; indiscriminate logging; logging for commercialization; hunting for commercialization; hunting of endangered species; fishing in breeding season; fishing for profit; excessive noise affecting wildlife; any appropriation of natural resources for profit; inadequate waste management; governors and administrative authorities' failure to promote the territorial mandate; fencing without permission; offenses towards those promoting environmental education. The document indicates that infractions would be further regulated by the mandate of social balance (Pueblo Salia 2012a, 96).

7.2.3.2 Operational and Collective-choice levels

Operational and collective choice rules are highly interconnected in the *resguardo*, as individual actions can hardly occur in complete lack of connexion with communal life. Family ties between the majority of inhabitants and the close location of homesteads increase mutual observation of individual behaviours. On another note, labour prescriptions and access to certain places also depend on gender. Hunting, which implies entering the forests, is only practiced by men. As well, they are in charge of cattle management. In contrast, fishing is a task performed by men and women. Nevertheless, this labour division based on custom is going through changes. For example, agricultural activities are currently performed by all of household's members, therefore, the traditional male-exclusive slashing and burning can now have female participants if male labour availability is reduced[248]. Resources appropriation is further influenced by seasonal and ecological conditions which most Salias know very well. Agricultural activities cannot be carried out during the driest months, usually February and March, nor during the most humid month, usually July. Cattle management activities are usually carried out between January and May, during the dry season. Hunting and fishing are also influenced by seasonality, with fishery closures in May and June. However, it was observed during fieldwork that not all individuals follow these restrictions.

Land allocation among *resguardo*'s inhabitants depends primarily on their condition as eligible rights-holders. The people in *El Duya* has established a set of procedures to determine who can be considered as a dweller, as well as the requirements to achieve that status. In addition

[248] Rivero et al. (1980) describe labour division on detail as they saw it back then (See page 292).

to the status of dweller, there is a minimum age to acquire the right to take part in the allocation of *resguardo*'s resources. These and further requirements are summarised in Table 21. Land is allocated through plots that include areas in the savanna and the gallery forest. The house is built in the former, while agricultural plots are usually located in the latter. The general assembly determines how much and where an individual or a household is allowed to build a house or carry out agricultural activities. The extension and location of such area depends of two factors. On the one hand, the management capacities of the individual or household to effectively sustain productive activities in the area; on the other hand, the past occupation of the area, which has resulted in some families controlling larger plots[249].

New land allocation is made primarily for newly formed couples, who must take part in communal work in order to become eligible for a plot in the future. In practice, most people live and work with their parents until they form a new household with their partner. It should be noted that ecological criteria are not the main determinant for plot's allocation which, in addition to the increasing use of fences in the *resguardo*, results in some households having access to more productive savannas while others are left with areas with worse ecological conditions which affect cattle ranching productivity.

Table 21. Requirements to appropriate resources in *El Duya*.

Requirement / Resource	Age (≥16)	Unemployment condition	Participation in communal tasks	Registration as inhabitant	No restrictions
Land allocation	X		X	X	
Biodiversity, water				X	
National budget for *resguardo*				X	X
Oil company compensations	X		X	X	
Remunerated activity within the *resguardo*	X	X	X	X	
Emergency aid				X	X
Business within the *resguardo*				X	

Source: author's own compilation

[249] Fieldwork diary: June 11, 2018.

Appropriation of natural resources occurs in the absence of clear-cut prescriptions at the *resguardo* level regarding how much should a person appropriate. Individuals are expected to restrain themselves from hunting and fishing too much, although there is not a standardized measure. Forest products are not subject of collective control unless their appropriation occurs in plots controlled by other people. Currently, households obtain timber and fuel wood from the plot under their control while extraction of non-timber products has been reduced (leaves, fruits, barks). However, no limits to extraction quantities have been established. As well, measures aimed at mitigating the effects of extraction are not available. The cutting of Trees can be disputed even if done by the plot's holder if considered as detrimental for the community, which is then discussed in the general assembly. Minor use of other communal resources, such as sand, may require of prior notice to members of the *cabildo*, while large quantities require approval by the general assembly. Commercialization of wild game and fishes outside the *resguardo* is forbidden. Purchasing from a neighbour is possible but uncommon, as hunting and fishing can be performed almost by anyone. When a large prey is found or several fishes are caught, it is frequent to share some of it to close relatives, who will then offer something in return. Table 22 presents a summary of the type of prescriptions in place in *El Duya* according to the information provided by interviewees and observations in the field. Some of these do not fully conform to what is established neither in the territorial mandate nor in the social balance mandate. This constitutes an omission rather than an active contradiction and is related to questions of monitoring and sanctioning, discussed in the next section.

Table 22. Types of prescriptions for the appropriation of natural resources in *El Duya*.

Resource system used	Action	Prescriptions (deontics)		
		Must not	Must	May
Fisheries	Appropriation		Appropriate only for self-supply	
Forests (area)	Appropriation		Ask for permission to the *cabildo* and/or general assembly	
	Waste disposal			Dispose at will
Mining resources	Appropriation		Ask for permission to the *cabildo* and/or general assembly	
	Waste disposal			Dispose at will

Forage	Appropriation		Appropriate without affecting others	
	Waste disposal			Dispose at will
Savannas (area)	Appropriation		Ask for permission to the *cabildo* and/or general assembly	
	Waste disposal			Dispose at will
Timber and non-timber products	Appropriation		Appropriate only for self-supply	
	Waste disposal			Dispose at will
Waterbodies (volume)	Appropriation			Appropriate at will (technology is highly limited)
	Waste disposal	Pollute		
Wild meat	Appropriation		Appropriate only for self-supply	
	Waste disposal			Dispose at will

Source: author's own compilation

In addition to the appropriation of ecosystem components, people in *El Duya* obtain resources from compensations offered by oil companies, resulting from agreements reached in prior consultation processes. During fieldwork, *resguardo* dwellers were formulating a proposal for an oil company, which would grant each household a certain number of heads of cattle, hogs, poultry and fishes, as well as some basic infrastructure for aquaculture. The proposal required approval by the general assembly before being sent to the company. The benefits produced by this proposal were available for all registered households, after the approval of the assembly; however, each household was free to decide which domestic animals to receive.

In addition to individual appropriation, there is a collective form of appropriation in *El Duya*, which corresponds to a communal farm crafted in 2005, where cattle and poultry are collectively owned and managed. The communal farm was established using financial resources provided by the oil company of that time, Perenco, in addition to other resources such as timber obtained in the *resguardo* and the labour force of its dwellers. The farm was located away from settlements in an area of built a large house made of cement, with areas for lodging, cooking and storing agricultural tools. They fenced the savanna, in order to keep the communal cattle from roaming freely and set basic facilities for cattle and poultry management. The rules for the communal farm functioning determine that each household should stay there for two weeks in order to look after the animals and the house. It is by complying with each

household's turn that they become eligible for enjoying the benefits of the communal farm, for example, the consumption of the eggs and milk produced during those two weeks.

As well, the *cabildo* plans more complex tasks in relation to cattle management or maintenance, mainly during the dry season, by convoking people, distributing assignments and keeping the records of the attendees. According to the interviewees, it is a duty to have one member of each household attending these activities; nevertheless, it is also possible to arrange for someone else to fulfil such responsibility, either by paying someone else or by exchanging turns. The purpose of the communal farm is to sell cattle whenever cash is needed to supply communal needs, such as funding a communal meeting or granting financial aid to a patient that requires medical attention away from Orocué. In every case, it is the assembly who approves such measures.

The communal assembly is currently the most important instance of deliberation in the *resguardo*, where all significant decisions are made. Nevertheless, *cabildo* meetings, council of justice sessions and women's organisation meetings can also be considered as deliberation instances. Despite the role of the *cabildo* in organising assemblies through posters and verbally informing people; this process does not guarantee that everyone is aware of forthcoming meetings nor avoids misunderstandings about time and place, as observed during fieldwork. Furthermore, as most of the communal meetings are held in *Piñalito*; people from *Cucurital* sometimes claim to be left aside and push for meetings taking place there too. Further deliberation takes place whenever a general assembly of the Salia people is organised, which should rotate among the eight *resguardos*; nevertheless, it is common that the meetings are organised in *El Duya* because it´s the largest *resguardo* or in those which are closer to the urban area: *San Juanito* and *El Consejo*.

In addition to communal meetings, deliberation processes related to prior consultation started to take place in *El Duya* as of 1994, which are discussed with more detail regarding the second specific research question. During fieldwork, it was possible to attend a prior consultation meeting in which the management plan of the basin of *Caño San Miguel*[250] was the object of the consultation and the regional environmental authority, Corporinoquia, was the interested party. In this case, Corporinoquia hired an NGO to formulate the plan, whose staff was in charge of conducting the presentation of the project, while Corporinoquia's staff acted as

[250] Management plans for basins in Colombia correspond to spatial planning documents to which municipal spatial plans should conform to (hierarchically superior norm). Their formulation and implementation is always led by the regional environmental authorities or CARs.

companions. In addition to the interested parties, the representative of the ministry of interior, who mentioned was already familiar with *El Duya,* was the only State representative participating in the process, as representatives from the municipality or the Ombudsperson office did not attend. Deliberation lasted around eight hours and after much tension, the NGO committed to hire three *El Duya*'s inhabitants, with a salary of 1000000 Colombian pesos per month including full labour-related insurance, according to the legal frame. One of the inhabitants of the *resguardo* solicited that a publication would result after the formulation of the Plan, in which cultural information related to the relation between human and nature is included. Once they reached an agreement about the number of people employed by the project and their wage, some persons started to leave, while the final minutes recorded by the representative of the ministry of interior were quickly read aloud. No further comment was made. Then, people from Corporinoquia, the NGO and the ministry of interior left the *resguardo*.

In a 25-years span, there have been 16 prior consultation meetings in *El Duya*, 14 of which have been made regarding oil extraction related activities. One consultation has been held with a communications company, Claro Comcel S.A. and the most recent one corresponds to the consultation with Corporinoquia. It should be noted that Indigenous peoples in Colombia cannot oppose projects in their *resguardos*. Any act of territorial control exerted by the Salias of *El Duya* with respect to oil extraction related activities is structurally restricted in two ways. This is discussed in detail regarding research question three.

The collective level in this case is bounded by the existence of the *resguardo*; therefore, some of the institutional arrangements concern the social-ecological system itself in terms of the whole; rather than in terms of its parts, which was already discussed in terms of appropriation of natural resources. This corresponds to what Salias of *El Duya* call 'the Territory'. Despite land rights were secured with the bounding of the *resguardo*; people in *El Duya* has had to combat land grabbing and other pressures, which have resulted in prescriptions towards the defence of the boundaries of the *resguardo* and the exercise of authority within them.

7.2.3.2.1 Monitoring and Sanctioning rules

Monitoring and sanctioning are also organised according to constitutional level rules, established through the social balance mandate. The operational characteristics of monitoring implementation are defined in each *resguardo*. According to this mandate, social unbalance

includes misconducts between humans and towards '*nature beings such as waters, esteros, lagoons, forests, jungles, rivers, spiritual beings, celestial beings (…) etc*' (Pueblo Salia 2017, 16). As well, the mandate stablishes that the Salia people are *'the first guardians of nature' (p.* 16), a statement confirmed by several interviewees in the *resguardo*[251]. As all inhabitants have a monitoring duty, they are encouraged to inform the *cabildo* or the guard about anomalous situations. However, confrontation of rules' transgressors is reserved for the guard. Therefore, the indigenous guard is the organisational structure that is formally accountable for the surveillance of the territory and the monitoring of rules.

Once a misconduct is identified, the *cabildo* conducts the investigation and other organs are called in to decide which sanctions are to be applied. There are five justice organisms: the *cabildo*, the communal assembly, the council of justice, the indigenous guard and the traditional doctors (p. 35). The social balance mandate categorizes misconducts according to the type of unbalance they produce. Damages caused to '*ecosystems and biodiversity (natural resources)'* (p. 31) are considered grave unbalances. Mending measures depend on the type of misconduct, intentionality, background, age of the transgressor and mitigating conditions. Grave harm to ecosystems is punished with the inability to enjoy communal benefits for a period between one and 18 months, in addition to communal labour for a third part of such time. Grave actions include usurpation of communal wetlands; pollution of water bodies; air and soil pollution, hunting of endangered species[252]; excessive fishing in crucial reproductive periods; fishing with toxic substances; indiscriminate burning of savannas and forests, palm cutting and logging for commercial purposes.

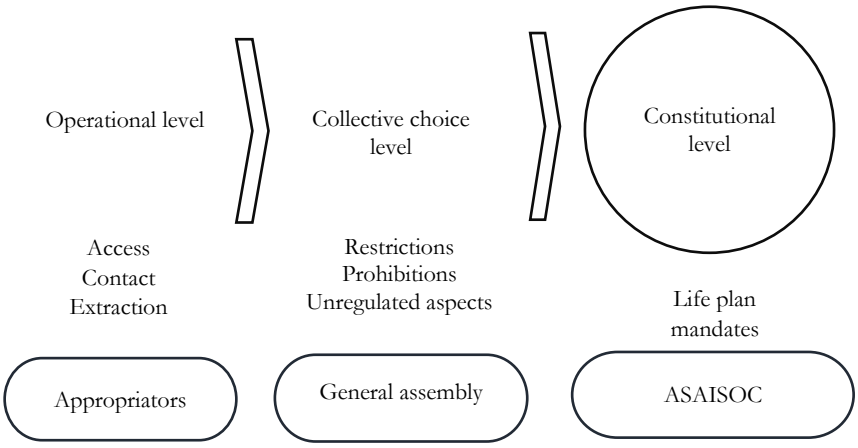
All infractions involving logging require the infractor to plant trees, in addition to the main sanction. If the misconduct takes place in a sacred site, it constitutes an aggravating condition; nevertheless, if the damage is assessed as low, the infractor should simply provide reparation to the community by performing communal labour. If the case is extremely grave, the *cabildo* and the justice council should submit the case to ordinary justice, according to what the Colombian criminal code, and pecuniary sanctions are imposed. Therefore, the constitutional level does stablish graduated sanctions, in line with the fifth design principle. Regarding external infractor, some interviewees narrated how the indigenous guard had caught foreigners attempting to extract fish with commercial goals. The fishing gears and fishes were seized and

[251] The mandate further stablishes that all individuals older than 10 years must act as an indigenous guard to defend collective, territorial and political rights whenever it is required by the circumstances, the authorities and the community.
[252] Article 115 of the mandate states that 'each indigenous community will define, according to available research or their own knowledge, which animals are endangered' (Pueblo Salia 2017, 50)

the infractors were told that recidivism would be punished gravely, which seemed to deter further foreigners attempts[253]. Nevertheless, several interviewees complained about the efficiency of the indigenous guard, suggesting that their members would not fulfil their duties as they should, some said that there was corruption among them. Several interviewees complained about the indigenous guard being hired to look after oil companies' equipment instead of watching over the territory. As well, some interviewees mentioned how there were cases of transgression of the rules by *resguardo*'s inhabitants but no sanctions were implemented, like cases of logging for commercial purposes, where the infraction had been detected, the timber had been kept in the *resguardo*, but no one was held accountable.[254]

Finally, Salia institutions are not involved in the follow up of oil-extraction related activities. The monitoring of these activities does not entail the possibility of imposing sanctions of any kind. In this regard, Salias are required to formulate a complaint and send it to non-indigenous environmental authorities, which decide on the matter according to their jurisdiction. This is analysed in detail for the second research question.

Figure 14. Levels of rules in Salia novel institutions



Source: author's own compilation. Rules at the operational level prescribe how appropriators can establish contact with, have access to and extract from ecosystems. Rules at the collective level include prohibitions and restrictions, determined by the general assembly, as well as unregulated features. Rules enforcement corresponds to indigenous guards and the *cabildo*. Rules at the constitutional level correspond to mandates that are valid for the eight Salia resguardos of Orocué and their enforcement is discussed by the assembly of ASAISOC.

[253] Fieldwork diary: May 12, 2018.
[254] Fieldwork diary: May 03, 2018; May 13, 2018.

7.2.3.2.2 Conflict- resolution mechanism

The sources of conflict over natural resources appropriation have been described in section 6.5.3; most of which are related to external actors. Internal conflicts in *El Duya* emerge regarding the allocation of forest plots; appropriation of forest resources, fencing of savannas; damages caused by cattle roaming and disturbance by neighbour's domestic animals. According to the information of the 2014 Agricultural census, the median in productive units is of 10,5 ha, which include areas with natural covers, those in regeneration and areas under agricultural use. However, the minimal value reported in this census was of 1,5 ha; while 13 units appear to be larger than 200 ha[255]. Considering that not all areas of the *resguardo* have the same productivity levels, conflicts emerge regarding disparities in terms of land distribution and land quality.

Some conflicts can be solved between the involved parties through the mediation of the council of justice and the *cabildo*. When this is not possible, a communal meeting is convoked in order to discuss the topic on the general assembly, where all dwellers of the *resguardo* can take part. Communal meetings are relatively easy to organise. The members of the *cabildo* set a date, spread the call and act as moderators and minute takers during the meeting. The follow-up of the decisions made by the assembly is made by the *cabildo* or designated actors. Nevertheless, some interviewees mentioned that accountability could be either fuzzy or neglected. In cases of extreme disagreement, the general assembly could decide that the case requires of the involvement of higher level Salia structures.

7.3 Drivers of institutional transformation

According to Ostrom (1990), '*A change in any rule affecting the set of participants, the set of strategies available to participants, the control they have over outcomes, the information they have, or the payoffs is an institutional change'* (p. 140). Considering the milestones in the evolution of Salia institutions, it is possible to identify a process of institutional change as of the middle of the 20th century. Most interviewees coincide in assessing such change as one that has fostered the weakening of Salia identity and culture. Janssen et al. (2004) identify two types of challenges for actors within social-ecological systems. The *'first type of challenge is a slow, persistent change in socioeconomic*

[255] According to the census methodology, the area is reported here according to the information provided by the respondent. Therefore, it is likely that the figures are not exact. The total area reported in the census is of 11418,2 ha, which corresponds to 97 % of the total area of the *resguardo*. Considering the Median, further distribution could provide 35 families with productive units

conditions or technology (p. 312); while the second type corresponds to '*top-down imposed change of institutional arrangements'* (p. 312), usually fostered by high level authorities. *El Duya* appears to face both types although in a differentiated way.

Several interviewees suggested that drastic transformations started with the introduction of the schooling system managed by the Apostolic Vicariate[256], which caused a rupture in the transmission of Salia language. The first school was built by Salias themselves using the infrastructure abandoned by an oil company[257], which corresponds to the site where the school is currently located. Students used to be punished if they spoke Salia language at school, which weakened their ability to speak the language, which affected boys mainly[258]. Education services managed by the Vicariate involved catholic indoctrination, which imposed the catholic worldview over Salia worldview. These restrictions explain that most young adults are currently passive speakers of Salia language; while active speakers correspond to individuals above 40 years, mostly women (Estrada Ramírez 2014a). The disruption of language undermined the intergenerational transference of Salia customary institutions, based on the oral transmission of rules and practices.

During the decades of 1960 and 1970, further pressure was exerted over the Salia people through the encroachment of their lands and through the exercise of violence. However, the attempt of the Caribana elder to secure land rights by 1950 suggests that Salias' territory was already being disputed by non-indigenous colonizers. This led, on the one hand, to the loss of control over sacred sites, which affected the ability of Salias to maintain balance according to the law of origin. On the other hand, the settlement of foreigners in the area and the introduction of fences in their newly acquired lands, diminished the availability of natural resources for Salias. Land encroachment reduced the area used for obtaining food and materials. As well, it reduced the area for housing, which interfered with their forest harvesting practices.

Some sources indicate the existence of a non-indigenous organisational structure in *El Duya*, a type of peasants organisation known as 'JAC' (Roldán Ortega 1995, 280; Pueblo Salia 2011, 55), during the period of the constitution of the reserve, which coincides with the common

[256] The Vicar in charge was the catholic Priest Nicasio Balisa Melero. Back then, catholic administration of school systems was common in Colombia, therefore, Vicariate later sent a teacher to school built by Salias.
[257] The company was INTERCOL, which later was transformed into HOCOL and PETROCOL. According to Franco García (1997), this company carried out exploration in Orocué between 1945 and 1947 (p. 240).
[258] Fieldwork diary: May 3, 2018. According to Estrada Ramírez (2011, 17), once the school was operating, police officers started to '*visit households to force parents into sending their kids to school; while most families would hide girls and send only boys'*.

arrangement that the national government had recognised for peasants' organisations throughout the Country. However, the complexity of institutional change for Salias is not circumscribed to organisational structures. The following paragraphs illustrate the magnitude of the disruption of Salia systems for resource appropriation, through the analysis of how the settlement pattern was changed.

Houses in the floodable savannas of Orocué must be built in sites where the flooding that occurs every rainy season does not reach the house. This means, in practice, that most of the houses have to be built within the strips that border gallery forests. These houses were built with biodegradable materials. Roofs were always made of palm leaves and a wooden structure[259]; the clamping was made using the bark of *Copaifera pubiflora* and a vine known as '*iguanito'*, which was obtained in the *Caño Churrubay*, currently beyond *resguardo*'s boundaries. The walls were built with a mixture of manure and mud, which was used to fill a grid-like (basket) structure made of bamboo (*Guadua spp.*) or wood[260]. Finally, the doors were built with wooden boards or animal skins and the floor used to be tamped soil. In these houses, the palm roofing would not last more than three years. The replacement of roofs required of new leaves, which were obtained in the gallery forest, where Salias had to look for palms with the right size of leaves, then they cut the leaves and transported them to the house site[261]. Therefore, building a house not only was labour intensive; but also required access to several forest plots for obtaining construction materials. Furthermore, some materials required access to specific forest areas, like those in *Caño Churrubay*, for example. Whenever the house required reparation or the change of the roof, Salias would decide if they stayed in that site depending on the proximity of materials for housing and the productivity level of the forest agricultural plot.

Salias reported to have agricultural plots of 1 ha and 0,5 plots for obtaining wood. Therefore, Salia households required of additional areas to these 1,5 ha to find construction materials, since agricultural plots were established through slash and burn. If all palms could be found in the same plot, a Salia household would require access and control of approximately 2 ha in the gallery forest, which would require change every three years, when agricultural productivity

[259] Fieldwork diary: May 9, 2018. Literature indicates the use of *Attalea butyracea*, *Mauritia flexuosa* and *Attalea maripa*; however, the interviewees reported the use of *Coroba* palm, as different from the former.
[260] Some people would use a mixture of grass and mud, instead of manure, as the filling material for the walls, while others would only use palms to make an '*Ensoropado'*, which consisted in using palm leaves for the roof but also for the walls, by cutting the petiole and rachis of the leaves and placing whole leaves above them.
[261] A small house required between 300 and 600 hundred leaves, while a big one would require approximately 800 leaves. If the roofs were built with *Attalea butyracea,* which takes at least 25 years to reach the adult stage (Galeano and Olivares 2013, 169), the harvesting of one palm provided 30 leaves approximately. A small house required, thus, of at least 10 adult palms every three years. The harvest of a maximum of 30 % of expanded leaves in adult palms requires of two years between harvests for the full recovery of the crown (p. 173).

declines. If a household is formed by couple of age 18, they might develop agricultural activities for an average of 50 years, which corresponds to a total of 34 ha used. Interviewed Salias informed that agricultural plots were abandoned for at least five years to foster their recovery before planting again. Nevertheless, Poorter et al. (2016) indicate that the return of a deforested area to the state prior to deforestation '*takes a median time of 66 years to recover to 90 % of old-growth values'* (p. 214). In this line of thought, the forest plots that were cleared by the Salia households in 1955 would be recovered in 2021. Moreover, figures from multiple sources[262] indicate that the population in *El Duya* has increased in 167 % between 1975 and 2018; as shown in Table 23. However, it is not possible to provide an unequivocal explanation of these demographic phenomena due to the lack of data in terms of migration flows, death and birth rates.

Table 23. Population growth in *El Duya.*

Year	Families	Population	Growth rate %	Source
1955	6	No data	---	Interviewees
1965	19	No data	---	Morey, 1972
1975	31	199	---	INCORA, 1978
1995	52	338	69,85	Roldán Ortega, 1995
2005	80	367	8,58	Pueblo Salia, 2005.
2013	125	470	28,06	DANE, 2014
2014	150	504	7,23	Pueblo Salia and Ministerio del interior, 2014
2018	137	532	5,55	ASAISOC, 2018.

Source: author's own compilation.

Therefore, colonizers' encroachment of Salia territory restricted the areas for the location of Salia houses and agricultural plots and limited access to forest resources. This forced Salia families to build their houses closer to one another with two main consequences: on the one hand, these changes disrupted the order or balance guarded by customary institutions. On the other hand, social conflicts emerged linked to increased competition for resources and loss of privacy. Furthermore, the spatial concentration of Salia households also led to the concentration of cleared forest areas and the reduction of their regeneration periods.

[262] The national department of statistics has disclosed data at *resguardo* level only for 2014.

Moreover, the extensive cattle ranching system was also affected, as grazing areas in the savannas started to be fenced by colonizers. With the bounding of the *resguardo*, the increase in heads of cattle has also fostered the emergence of conflicts, which are caused by the free roaming of cattle in the proximity of houses and agricultural plots. According to the resolution that created the reserve in 1975; among the 31 families that lived in *El Duya,* not all of them owned cattle and if they did, they would not have more than 20 animals (INCORA, 1978). However, the amount of cattle in *El Duya* has been increasing ever since. Data provided by the national census for agricultural activities of 2014, indicate that 79,8 % of Salia households owned cattle in 2013, where the Median among owners was of 7 heads per household. Furthermore, 24 households had more than 20 heads of cattle. In total, the census reports 2247 heads of cattle in *El Duya* for 2013 (DANE 2014). If the number of cattle in 1975 is estimated on 600 heads[263]; the census data shows that there was an increase in heads of cattle of 274,5 % in the *resguardo*.

In 1983, one year after the creation of the *resguardo*, Occidental de Colombia (OXY) drilled an exploration pit without consulting the Salia people. According to indigenous interviewees, OXY's activities led to the poisoning of cattle[264], which the company managed by paying for the damages. Interviewees narrated how the company started by offering goods and later switched to distributing money among Salias. Before the company came to the *resguardo*, cash was obtained through the commercialization of agricultural products in Orocué or through wages in low paid rural activities. Therefore, the sums introduced by the company were unprecedently large for *resguardo*'s daily life, which led to a drastic change in internal relationships through the monetization of relations that used to be mediated by exchange. Furthermore, the presence of non-indigenous employees of the oil company was also associated to the harassment of indigenous women and the increase of alcohol consumption among Salia men.

In this context, collective customary practices started to be regarded as inconvenient. Food sharing, for example, was no longer practiced with non-family members. Traditional gastronomy is based on products harvested in the *resguardo* that were highly influenced by seasonality; therefore, people relied on their relations with neighbours and relatives to fulfil their nutritional requirements. Cash availability increased the access to products sold in the

[263] According to INCORA (1978), with a universe of 31 families, a extreme scenario assumes that 30 of them owned cattle, 20 animals each.
[264] Fieldwork diary: May 03 of 2018; May 05 of 2018. Roldán Ortega (1995) presents a detailed description about the incident, see page 281.

urban area, which reduced interactions around food and fostered changes in Salia traditional diets. Moreover, the increase of cash fostered by the oil companies also affected livestock and agricultural production systems. The physical effort involved in slashing and burning, as well as in managing the cattle, relied on a system of labour exchange. Several men used to take part of these activities, with the commitment to benefit from other's labour if required. As well, shared labour included having meals cooked by the women in the benefited household, which provided a space to interact. Currently, these exchanges occur among family members only; while the *cabildo* requests inhabitants to take part of collective tasks as a prerequisite for obtaining benefits.

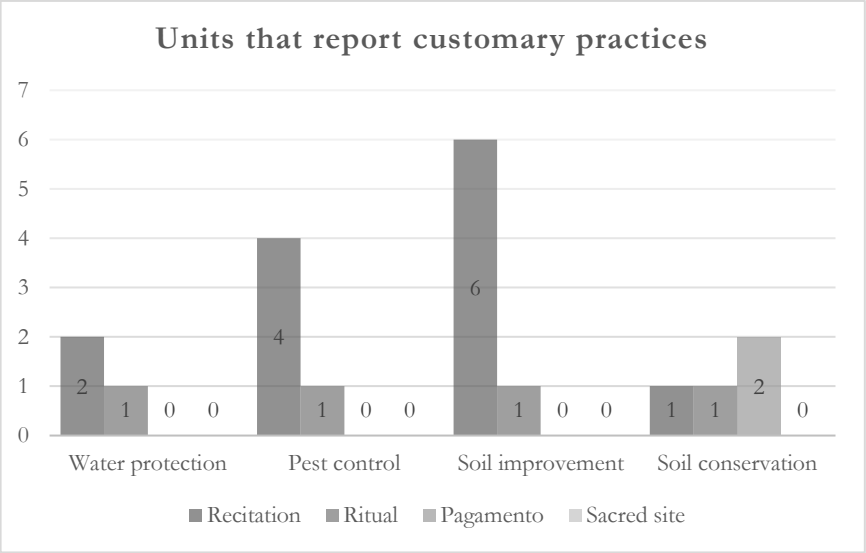
Some interviewees affirm that once the oil companies started to interfere with their customary way of living, they lost their social, cultural and environmental balance; as well as their authority and autonomy[265]. Nevertheless, it is difficult to identify a concrete event that signals the demise of Salia institutions. Instead, it appears to be that Salia institutions have been transforming over time and that there was a concentration of impacts over Salia customary institutions during the decade of 1980. These impacts correspond mainly to the arrival of the oil company and the establishment of the *cabildo* as the governing body of the *resguardo,* which marked the change towards current institutional arrangements.

Along with changes in the way that Salias related to nature, the knowledge about customary rules started to decrease. Data produced by the national census of agricultural activities of 2014 suggests that implementation of customary practices is scarce in *El Duya*. When asked about the use of recitations, rituals and other customary practices for natural resources management, few respondents claimed to use them, as can be observed in Figure 15. This census surveyed a total of 109 agricultural productive units in the *resguardo,* including a communal farm[266]. Among these, only 14 units, including the communal farm, implemented these practices; while only three units implemented more than one. Recitations were the most common practice; in contrast to sacred sites, which were not mentioned.

[265] Fieldwork diary: May 16, 2018; May 13, 2018.

[266] The census' microdata set contains anonymized information for each productive unit or UPA. Census' definition of UPAs allows several households per unit. 125 households are reported for 2013 in *El Duya* (DANE, 2014b). The communal farm could be identified because it is the only unit managed by a legal representative.

Figure 15. Use of customary practices for agriculture in *El Duya*



Source: author's own compilation based on DANE, 2014b.

Even though customary practices are not circumscribed to agriculture; they constitute a distinctive trait of Salia livelihoods and contribute to understand institutional decay. The demise of Salia language led to the limitation of reproducing recitations[267]. Language problems led to the disruption of the transmission of customary practices to younger generations[268]. As well, elders started to pass away without fully transmitting their knowledge. The decrease on knowledge about customary practices led many younger Salias to stop observing the customary protocols, which triggered the dissipation of customary authority and rules. As well, the role of *Saikwas* weakened, not only because of the general debilitation of customary institutions, but also because their reputation was affected by the abandonment of *Yopo* and its replacement with alcoholic beverages[269]. Therefore, the weakening of Salia customary institutions is inextricably bounded to the weakening of customary authorities, between which there appears to be a negative feedback loop.

7.3.1 Design principles in *El Duya*

Previous sections have shown the rules in *El Duya* concerning the appropriation of natural resources. These elements are used now to analyse the extent to which the design principles

[267] According to the 2018 *El Duya*'s census, 123 persons born between 1929 and 1975. If active speakers are 40 year olds persons (Estrada Ramírez, 2014a); then 24 % of *El Duya*'s population actively speaks in 2018.
[268] Fieldwork diary: May 13, 2018; May 07, 2018.
[269] *Saikwas* could not heal under the effects of alcohol. Fieldwork diary: May 16, 2018.

are met in this *resguardo*, analysed as a social-ecological system. This is summarized in Table 24. The analysis suggests that all the design principles are present in Salia institutions in *El Duya*; nevertheless, several of them seem to have implementation problems.

Table 24. Design principles in Salia institutions of *El Duya*.

Institutional design principles	Expression in *El Duya*
1.a User boundaries	Users are defined through the annual census. Land allocation and benefits distribution are defined in the general assembly. A minimal age of 16 for individuals, as well as a minimal time frame of 2 years for couples, are prerequisites for enjoying benefits and obtaining a plot.
1.b Resource boundaries	Defined through the demarcation and titling of *El Duya*.
2.a Congruence with local conditions	Rules restricting time, place, technology and quantity of use of ecosystem components correspond to the conditions of the r*esguardo*. For example, the use of fishing gear known as '*chinchorro'* is not allowed because of its impacts on *resguardo*'s aquatic ecosystems.
2.b Appropriation and provision	Rules for appropriation of ecosystem components respond to the goal of providing all rightful users with means for subsistence. Each household is responsible for supporting itself, except for elderly persons unable to work. Provision, thus, occurs on the basis of each household's needs. Benefits obtained from the *resguardo* as an entity, such as national budget share or prior consultation-related compensations are bound to fulfiling communal duties like attending communal meetings and providing labour when required.
3. Collective-choice arrangements	Individuals affected by operational rules can participate in their modification, except for those who are not included in the census.
4a. Monitoring users	There is a formal designation of monitors for examining the behaviour of appropriators. Formally, these monitors are accountable to users. However, the effectiveness of monitoring is questioned by dwellers.
4b. Monitoring the resource	Monitoring of the condition of natural resources is limited to the perceived abundance or scarcity of biodiversity, also applied to forest cover. Water and air are monitored through organoleptic variables, while soil is not included in their monitoring. No systematic monitoring records are available.
5. Graduated sanctions	The norms crafted to manage transgressions include sanctions, which are assigned according to the seriousness of the offense. Governing and justice bodies conduct investigations, while other appropriators take part in the general assembly to decide about sanctioning conditions. However, enforcement of sanctions for transgressions concerning natural resources remains to be implemented.
6. Conflict-resolution mechanisms	Conflict resolution over appropriation of ecosystem's components is settled by the council of justice, the *cabildo* and ultimately, the general assembly. Investigation and resolution are generally carried out rapidly.

7. Minimal recognition of rights to organise	The people of *El Duya* has devised their own institutions, according to the constitutional frame of Colombia; however, Salia institutional arrangements are challenged in relation to oil extraction related activities. These shift decision-making to external actors, governmental and non-governmental, while Salias are excluded.
8. Nested enterprises	Organisational structures in the *resguardo* are nested in several layers with considerable overlapping, as shown in Figure 12. However, the nesting might involve other indigenous and non-indigenous actors, depending on the level and criteria of analysis: Salia people of Orocué, other national and regional indigenous organisations, territorial entities, oil companies.

Source: author's own compilation based on Ostrom, 1990; Cox et al., 2010.

From the analysis for *El Duya*, some key elements emerge to characterise each design principle. Principle 1a (user boundaries) is defined through three variables: annual census of *resguardo* inhabitants; minimal age to access benefits and, in the case of couples, minimal duration of partnership. Therefore, appropriators are enabled through a graduated scheme. Principle 1b is expressed through three variables: legal land title, physical barriers or fences and administrative boundaries, such as the rural division of *resguardos* and *veredas*. However, land encroachment problems dilute the integrity of principle 1b (resource boundaries).

Principle 2a (congruence with local conditions) is based on knowledge about ecosystem dynamics over which restrictions are formulated. Principle 2b (appropriation and provision) is based on social and cultural aspects of the system. On the one hand, benefits derived from the extraction of ecosystem components are proportional to the procurement abilities of individuals. As harvesting rates are highly limited by lack of capital, technology and motivation to increase returns in the short term, the rates are considered low enough for the ecological system to replenish by itself. On the other hand, benefits derived from productive activities such as communal cattle ranching are determined according to household's participation on communal activities, rather than an exact amount of labour or materials invested.

Principle 3 (collective-choice arrangements) is based on two variables: individual and household participation. All Salia individuals are entitled to deliberate in collective arenas; however, since households are also used as units among which distribution of benefits is made, sometimes a representative of each household is preferred over all individuals.

Principle 4a (monitoring users) is expressed through two variables: appropriators acting as monitors and indigenous guards who are given the role of monitors. The perception of indigenous guards as effectively monitoring appropriate behaviours concerning nature tends

to be questioned by appropriators. Principle 4b (monitoring the resource) results from the performance of daily activities that involve appropriation of ecosystem components, in which people can perceive changes related to wildlife abundance, flow variation in water bodies and organoleptic characteristics of air, water or fish, for example. Perceived changes and information are exchanged between appropriators and discussed in collective arenas; however, no systematic monitoring is currently available, which hinders the full implementation of the principle.

Principle 5 (graduated sanctions) is expressed in *El Duya* through two variables. The first one corresponds to the design of formal sanctioning rules and the procedures for their implementation, which is supported by *resguardo*-level institutions. The second one corresponds to the enforcement of such rules, which remains to be implemented. Thus, sanctions are formally established but not enforced.

Principle 6 (conflict-resolution mechanisms) in *El Duya* responds to a graduated system, in which there is a progressive involvement of people in the resolution of conflicts as they grow more complex. There is no fixed number of meetings or time frame for conflict resolution and the involvement of further instances is decided on each case. However, despite clearly established conflict resolution mechanisms, the deterioration of ecosystems caused by Salia's activities is not being actively addressed.

Principle 7 (minimal recognition of rights to organise) is considered as present in a system when '*the rights of appropriators to devise their own institutions are not challenged by external governmental authorities*' (Cox et al. 2010, p. 15). According to this formulation, this principle would be present in *El Duya*. Salia dwellers are not kept from crafting their own rules; moreover, their institutions are formally recognised by governmental actors of the national level, department and municipal levels. This is expressed through the formulation of Salia's environmental agenda, promoted by the ministry of environment at the national level and co-financed by the regional environmental authority. Moreover, there is no interference of other actors over their prescriptions for appropriating ecosystem components on a daily basis. Nevertheless, once oil extraction-related activities are involved, external actors and particularly external governmental authorities do challenge Salia's institutional arrangements. Connecting principle 7 to a larger frame of indigenous territorial autonomy, the case shows that there is a formal recognition of Salia institutions provided by external actors, governmental and non-governmental. However, this recognition is limited once external governmental authorities enable non-governmental

actors to appropriate ecosystem components, under an institutional frame that excludes the Salia people.

Finally, principle 8 (nested enterprises) is expressed through two kinds of nesting, internal and external, where the first one involves indigenous actors only while the second one involves indigenous and non-indigenous actors who can be governmental or not. Institutional arrangements at the *resguardo* are nested in the general assembly as well as in the mandates created by the traditional Salia authorities' association of Orocué (ASAISOC), which also take part in the multilevel structure of the national indigenous organisation (ONIC). Furthermore, the authorities of *El Duya* are nested in the national environmental system (SINA), which is also multi-layered; despite pitfalls identified for principle 7. As well, *resguardo*-level institutions are nested in the matrix of the municipality and the department from a territorial planning perspective.

7.3.2 Robustness of the SES

Anderies et al. (2004) affirmed that robust social-ecological systems '*could be characterized as incorporating a large number of these principles'* (p. 8), which are thought to contribute to the persistence of natural resources. However, there is not yet a clear indication of what arrays of principles are required to maintain the robustness of systems. Therefore, the design principles were clustered according to their main purpose. The case of *El Duya* suggests that principles 1a and 1b constitute a first group, which conduces to a delineation of institutional jurisdiction and the definition of legitimate (Salia registered dwellers) and non-legitimate users (non-registered individuals). Fences have been installed to separate the *resguardo* from the larger biophysical environment, creating, thus, a spatially based jurisdiction where all legitimate dwellers participate in defining the requirements for the reception of benefits. Therefore, there is no reason for distrusting institutional arrangements, since they are transparent in the exclusion of outsiders and dwellers know the rules for appropriation.

The second group is compounded by principles 2a, 2b and 3, which constitute the core of the rules set. These principles are crafted to guarantee that all legitimate users can appropriate resources without causing their depletion. Salias of *El Duya* have a deep knowledge about the key characteristics of their ecosystems, which are restricted by their proneness to flooding during the rainy season and water scarcity during dry season. Most Salias are knowledgeable about breeding and harvesting seasons of species important for their subsistence, as well, the

location of resources is usually well known. Thus, the knowledge about ecological restrictions promotes the crafting of rules over resource appropriation. Regulations over natural resources use also affects Salia society. Since the rules are discussed and set through communal meetings and general assemblies, dwellers are aware of the existence of the norms and know who of their neighbours also took part in the process of defining the rules. Therefore, none of the attendants can claim to ignore the regulations; while those who did not attend cannot complain, because they had the chance to take part of the process. Furthermore, it also contributes to the preservation and strengthening of Salia collective identity, because these meetings constitute an exercise of self-determination. As well, the meetings promote a sense of community because it provides a reason for seeing each other and interacting over common concerns.

The third group is compounded by principles 4a, 4b, 5 and 6 which conduce to the enforcement of rules. These principles require of the exercise of authority to act whenever the rules have been transgressed, to assess the seriousness of the transgression and the type sanctions. The analysis of *El Duya* indicates that the variables that compound these principles are currently not fully present. A crucial element is how the action of monitors (indigenous guards) is evaluated by the people of the *resguardo*. This was criticised as inefficient by some interviewees, even if their close relatives were part of the indigenous guard (principle 4a). There was no report of sanctioning concerning the appropriation of natural resources despite transgressions by *resguardo*'s dwellers (principle 5).

Finally, despite Salia knowledge about their ecosystems, the current state of natural resources is not being monitored in a way that allows Salias to assess the degree of ecosystem degradation. Salias do notice the decrease in animal populations, which is evident in the reduction of the frequency of watching of certain species, as well as the increase in hunting and fishing effort. However, the people of *El Duya* have not yet developed a collective framework under which benchmarks can be established (principle 4b). Thus, the principles in the third group indicate that the exercise of authority for enforcement is compromised.

Conflict resolution appears to be effective in *El Duya*, because they have crafted a system in which confrontation is mediated by authorities and even by the whole community. Nevertheless, conciliation is preferred over confrontation and individuals are deterred from openly accusing neighbours or relatives of misconducts involving natural resources appropriation. Dwellers expect their authorities to confront transgressors; however, most of

the interviewees indicated that authorities prefer to avoid such confrontation. Therefore, authorities are regarded as weak and their fit is questioned.

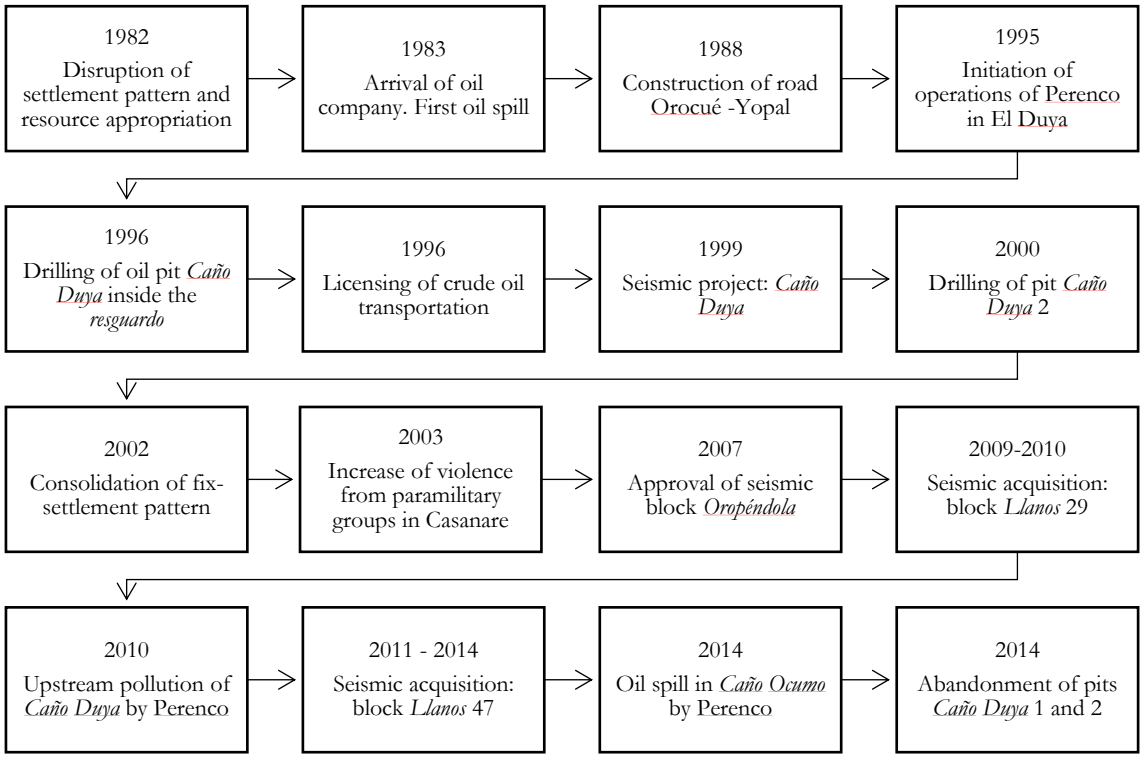
The fourth group is formed by principles 7 and 8, considering that both were formulated in terms of the effects of external actors over system's institutions. Evidence from *El Duya* suggests that in addition to governmental actors, others should be considered. In *El Duya*, actors related to oil extraction activities, neighbouring landowners and fellow indigenous actors play a role in the structuring of institutional arrangements (principle 7). The role of external actors is then related to the nesting of the system, which is manifest in *El Duya* concerning three elements: 1) regarding scale, which ranges from the *resguardo* to the global scale if multinational oil companies are considered; 2) organisation, which involves collective features that range from indigenous family clans to a national level indigenous organisation; and 3) socioeconomic characteristics, which promote the labelling of the Salia Indigenous people, as a distinctive group from the rest of the population. The analysis of the fourth group indicates that Salia institutions of *El Duya* are often constrained by more powerful arrangements, with which Salias build relationships characterised by resistance rather than mutual adjustment.

The conditions in *El Duya* indicate that principles in the last two groups are only partially met; however, none of the principles is absent in the *resguardo*. Following Anderies *et al.* (2004), *'a SES is robust if it prevents the ecological systems upon which it relies from moving into a new domain of attraction that cannot support a human population, or that will induce a transition that causes long-term human suffering'* (p. 7). *El Duya* has not gone through any catastrophe nor has exhibited any indication of massive human migration, which could have been caused by the collapse of ecological systems. On the contrary, dwellers of *El Duya* have been able to continue appropriating natural resources for their livelihoods despite exposure to several kinds of disturbances throughout 37 years, which can be observed in Figure 16. While some disturbances are caused by internal dynamics, most of the disturbances have been induced by non-indigenous actors and are related to oil extraction activities.

Current knowledge about the impacts of activities related to hydrocarbons extraction over ecosystems is poor, '*particularly in tropical habitats'* (Deichmann et al. 2017). Furthermore, the assessment of impacts over savanna ecosystems such as those of *El Duya* is even scarcer. Nevertheless, two oil spills within the *resguardo*, in addition to other oil spills and wastewater pollution in neighbouring areas, constitute clear indications of the probability of persistent environmental impacts on soils, water bodies and biodiversity. Therefore, external non-

indigenous actors are accountable for the most complex environmental disturbances. As well, there are internally-induced processes of ecosystem degradation. When asked about the state of nature in *El Duya*, every indigenous interviewee assessed it to be in poorer conditions than past times. The majority expressed how the oil extraction related activities had caused the environmental decline in the *resguardo*; although, some people did identify how their own activities affected ecosystems. Oil extraction-related activities produce impacts at all stages, some of which are managed according to EMPs; however, there are structural limitations in guaranteeing that management measures are properly implemented.

Figure 16. Disturbances in the social-ecological system of *El Duya*



Source: author's own compilation based on ANLA, 2019; ministry of interior, 2019; Rodríguez, 2014.

The evidence of *El Duya* suggests that Salia institutional arrangements have played a crucial role in maintaining the integrity of the social-ecological system, considering the scarce involvement of environmental authorities which claim to lack of jurisdiction to intervene in the *resguardo*, such as Corporinoquia (2016, 95) and the national environmental licensing authority (ANLA) (2019, 3). Regional and national environmental authorities decide about the

implementation of high impact activities, under the premise of compliance with environmental regulations. Allowance is formalized through the approval of licenses and permits, which require the petitioners to inform about indigenous populations. However, decision-making is reserved for governmental authorities. Currently, the people of *El Duya* manage some of their environmental impacts, listed in Table 25. The impacts under management correspond to those that can be observed. On the one hand, the gallery forest is a limited resource, which facilitates noticing signs of reduction of availability and identifying direct consequences for the people of *El Duya,* such as lack of wood, and possible solutions, such as reforestation. On the other hand, decrease in water quantity is also a noticeable impact because it is used on a daily basis. Nevertheless, Salias' ability to respond is limited, since rainfall and groundwater dynamics are beyond their control. Furthermore, the situation is different for each ecosystem. Gallery forests may recover by themselves if left undisturbed; running waters may dilute pollutants and transport them away from *El Duya*; in contrast, soil and biodiversity loss may reach a point beyond recovery.

Table 25. Salia livelihood's impact over ecosystems in *El Duya.*

Drivers	Pressures	Impacts	Mitigation actions
Population growth	Land consumption for housing	Habitat loss	Permanent settlement in other *resguardos* migration outside Orocué
	Production of domestic waste water	Decrease of water quality	Waste water treatment
	Solid waste pollution	Decrease of soil quality; pollution of water bodies	None
	Extraction of groundwater for human consumption	Decrease of groundwater quantity	None
Agriculture	Clereance of forest areas for agriculture	Habitat loss; forest degradation	Purchase of food in urban areas
	Extensive cattle ranching	Soil compactation; erosion	None
	Burning of pastures	Soil ecosystem degradation; erosion; habitat loss	None
	Uncontrolled burning	Degradation of forests and morichales	None
	Runoff of agrochemicals to water bodies	Decrease of water quality; ecosystem degradation	None

Energy use	Clereance of forest areas for firewood	Habitat loss; forest; degradation; erosion	Use of gas for cooking
Housing	Extraction of forest products for housing	Forest degradation	Purchase of housing materials in urban area
Food provision	Hunting and fishing	Decrease of individuals	Closure seasons
Transport	Production of particulate matter through vehicles circulation	Decrease of air quality	None
Waste management	Production of particulate matter through waste burning	Decrease of air quality	None
Lifestyle	Domestic and feral dogs and cats predation of wildlife	Decrease of individuals	None

Source: author's own compilation.

Water resources were described as currently having bad conditions, which they associate with changes in the availability of water. Several places that used to act as water reservoirs, especially the e*steros*, no longer retain water during the dry season. According to the interviewees, this has been caused by seismic exploration activities and the extraction of oil. Furthermore, a reduction of the size of ponds is identified in streams, even during the rainy season. Water bodies are further affected by the densification of human settlements, which has increased the concentration of liquid waste in certain sections of the *Caño Duya*. Despite the building of septic tanks; the lack of maintenance of these systems indicates that water treatment is noneffective.

Regarding biodiversity, interviewees reported a decrease in fauna species, such as l*apa* (*Cuniculus paca*) and p*aujil* (*Mitu tomentosum*), which are appreciated sources of wildmeat; as well, they reported a decrease in the populations of birds found in *esteros* and fishes. Timber and medicinal species, as well, have been reported as having decreased. When asked about the causes of the reduction, interviewees would explain that the noise caused by oil pits had scared animals. As well, they mentioned that foreigners would enter the *resguardo* for hunting and fishing, especially during night-time. However, when inquiring more on the period when changes started to be noticed, most of the interviewees mentioned that there were currently too many people in the *resguardo* which were causing the decrease in the availability of resources. As well, the interviewees mentioned how some of the traditional restrictions that used to be implemented to protect resources were no longer respected, such as the fishing

closure time or the restraint in hunting pregnant *cachicamos*, for example. Another reason for biodiversity loss is related to the presence of feral cats, which is not addressed by the people of the *resguardo*. It is difficult to estimate the extent of this problem; however, research on the effect of feral cats and dogs has highlighted the impact of these populations over biodiversity[270].

Regarding soil, erosion and degradation are processes fostered by extensive cattle ranching which requires of the burning of savannas, which may aggravate ongoing desertification processes (IGAC 2010, 128). Moreover, as the solid waste disposal in the *resguardo* is made through open air incineration, where combustion is incomplete, the ashes are alternatively buried on the soil or left outdoors. Often, burned waste includes plastic, toilet paper, metal packages and bottles as well as batteries. Therefore, in addition to air pollution and human exposure to particulate matter and toxic by-products, the high rainfall levels guarantee the lixiviation of polluting substances into superficial and underground waters. Currently, there is no accountability on internal environmental problems, as none of the organisational structures of *El Duya* has any function related to the prevention or mitigation of the environmental impacts found in the *resguardo*. However, some mitigating actions have been implemented, which contribute in maintaining *resguardo*'s ecosystems within a domain in which they can continue to be productive with the current level of population and resource appropriation.

It is possible to affirm that Salia institutional arrangements in *El Duya* have been crafted with the objective of avoiding the deterioration of current environmental conditions of the *resguardo* and restoration of ecosystems to the state they had prior to the consolidation of oil extraction as of 1994. Despite the lack of measurable indicators, most of the interviewees coincided in mentioning three elements as features that informed about the state of nature in *El Duya*: the availability of trees for timber, the persistence of streamflow in water bodies during the dry season and the abundance of animal protein (wildlife).

[270] See the work of Palmas et al. (2017) or Longcore et al. (2013), available at: https://doi.org/10.1016/j.biocon.2017.08.003 and https://doi.org/10.1111/j.1523-1739.2009.01174.x respectively. During fieldwork, one of the interviewees reported problems with feral dogs in another *resguardo*. In *El Duya*, someone else mentioned an incident of a domestic cat trying to hunt a *Lapa*.

8 ENVIRONMENTAL PLANNING IN INDIGENOUS TERRITORIES

'*We think: what is the best for our children? Is it possible that 50 years from now, will there be the same that we have today? I think that as time goes by, more people there will be. We consume more and then things start to decrease. Additionally, they are drilling. Now, in the summer, it is too hot. Could it be because they are draining all the blood from the Earth? I don't know why it is so hot. Could it be that the water goes too deep and the soil dries out, the Earth dries?*'[271] Salia elder, *El Duya*.

In Colombia, the basic unit for spatial planning is the municipality, for which territorial plans should be formulated[272]. However, *resguardos* may become indigenous territorial entities (ETIs), like municipalities, once an organic law for territorial planning (LOOT) establishes the conditions for their creation. Despite the enactment of a LOOT in 2011, there is currently a legislative omission regarding indigenous territories in Colombia[273] (CCC 2015). Colombian laws establish that people who live inside the boundaries of *resguardos* have the right to usufruct natural resources according to internal arrangements. In this scheme, the law indicates that authority over natural resources management is exerted by Indigenous peoples without interference from external actors, as long as the overall constitutional frame is observed. In contrast, Indigenous peoples living in areas over which they do not have collective titles, even if they may also craft their own institutional arrangements, the jurisdiction over natural resources is exerted by the regional environmental authority.

Moreover, the legal framework for the management of natural resources in indigenous territories varies according to the kind of resources involved. The conditions change in relation to extractive industries, such as construction of dams and forest harvesting. For sub-soil resources in particular, the constitution stablishes that they are owned by the Colombian State; regardless of their location. Accordingly, the management of these resources is led by two

[271] Fieldwork diary: June 11, 2018.

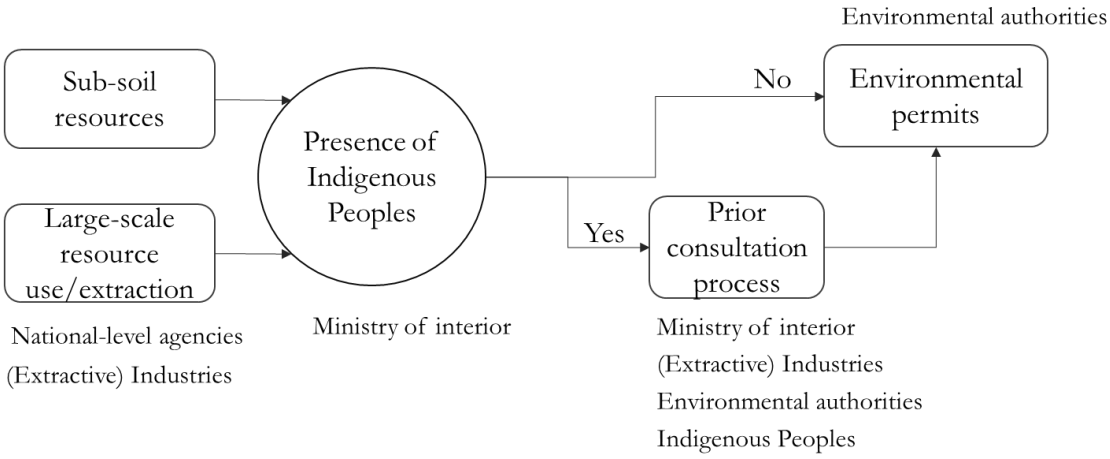
[272] According to the population size of each municipality, the plan has a particular name and involves specific requirements: for 100000 inhabitants, p*lan de ordenamiento territorial* (POT); 30000-100000 inhabitants, e*squema de ordenamiento territorial* (EOT); <30000 inhabitants, *plan básico de ordenamiento territorial* (PBOT). These criteria are stablished in law 388 (1997).

[273] The constitutional court of Colombia (CCC) stablished that only organic laws could appropriately regulate competencies related to territorial planning and development involving indigenous communities. See judgement C-795 (2000). However, the organic law (2011) did not address regions nor indigenous territorial entities; despite the mandate of the 1991 national constitution. See judgement C-617 (2015).

national-level agencies, which exert authority over the allocation of exploration / exploitation blocks or sites. As well, it is the national level which assesses environmental impacts and delivers permits to use natural resources. Depending on the type of activities involved in the extraction, some coordination with regional environmental authorities takes place. Therefore, the way in which environmental planning is made in indigenous territories depends on each context.

Whenever the use of natural resources is envisaged, potential appropriators are required to obtain a certification issued by the ministry of interior to clarify if there is overlapping with indigenous communities and/or *resguardos*. This certification is required by environmental authorities to start the process for issuing permits and licenses. If the overlap is confirmed, the ministry indicates that a prior consultation process should be developed, which is depicted in Figure 17. Nevertheless, the ministry of interior is not involved in decision-making over resource appropriation

Figure 17. Decision-making about the need for prior consultation in Colombia



Source: author's own compilation. If the use of natural resources takes place where Indigenous peoples are present, either in a resguardo or a community, the ministry of interior is tasked with providing a certification about such presence. When confirmed, the ministry of interior informs relevant actors about the requirement to conduct a prior consultation process, which should occur before the interested party applies for an environmental permit.

According to Colombian regulations, Indigenous peoples should be actively involved concerning the use of natural resources. However, there is no benchmark for the extent to

which indigenous institutions should be considered. The following section presents an analysis of how environmental planning has been made in *El Duya*. First, the regional level will be discussed, then the municipal level and finally the *resguardo* level. Whenever environmental planning is discussed, the spatial dimensions of this planning is emphasised. Therefore, a basic frame of Colombia's spatial environmental planning is provided before discussing *El Duya*.

8.1 Spatial environmental planning in Colombia

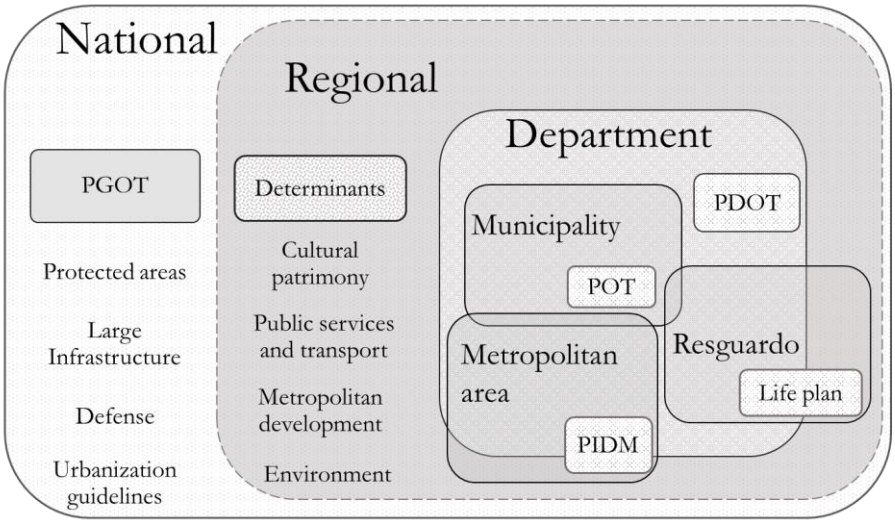
Territorial planning in Colombia occurs at four subnational levels, although only the municipalities have the competencies to establish a specific regulation for land uses. The overall frame is provided by the law 388 (1997) and indicates that there are some higher level criteria or 'determinants', which should be included in territorial plans. Nevertheless, there are no guidelines regarding indigenous territories. The only reference found corresponds to a technical document for the formulation of the general policy for territorial planning led by the national planning department (DNP), which indicates that

'*the existence of polygons corresponding to collective territories does not constitute a hierarchically superior determinant. (…) one thing is the land title, collective or individual, that is why the social and ecological function of property is defined in law 388 and another thing are territorial planning determinants, which go beyond any type of property and define structuring components of the territory'* (Yepes et al. 2019, 16).

The model presented in Figure 18 contains a representation that reflects regulations about territorial planning except for the *resguardo* level, which was included in order to set the elements necessary for discussing planning in indigenous territories. The document that characterises the *resguardo* level corresponds to indigenous life plans (*planes de vida indígena*), which emerged as planning documents as of 1991. According to the national constitution, territorial entities must formulate development plans to guide governments during the period for which mayors, governors or presidents are elected for. As well, article 330 indicates that one of the functions of indigenous territories is to formulate policies and programs of social and economic development in these territories. However, Indigenous peoples transformed these governmental plans into indigenous life plans. When asked about these plans, indigenous interviewees explained that all Indigenous peoples have life plans; regardless of their form, which can be oral, conceptual or textual. They explained, as well, that the prevalence of life

plans as documents is explained as the result of the recognition of their value for interacting with State actors[274].

Figure 18. Main features of Colombia's Territorial planning hierarchy



Source: author's own compilation. The national territorial planning policy corresponds to the PGOT, the department level policies are included in the PDOT, the municipal level territorial plan correspond to the POT and the metropolitan areas' policies in the PIDM.

According to the now extinct presidential program for Indigenous peoples of Colombia, life plans can be considered as a planning instrument in which Indigenous people define their own understanding of development and set their own priorities (PRC 2012, 24). However, indigenous life plans present singularities in relation to other territorial entities' plans. On the one hand, life plans are not bounded to administrative periods and can be changed according to the needs of each people. On the other hand, life plans usually contain dispositions related to land use, which in the case of municipalities and departments, are addressed through a different planning instrument, as shown in Figure 18. Furthermore, life plans are framed under Colombian constitution and include indigenous law conceptualisations such as the law of origin, indigenous millenary law ('*derecho milenario propio*') and superior law.

A further conceptual clarification is necessary before discussing the case study. This corresponds to the concepts of environmental determinants and ecological structure. Colombian laws stablish that the formulation of territorial plans must consider four types of

[274]Moreover, according to the information obtained in fieldwork, the ONIC is working on the diagnostic of the plans of the Indigenous peoples that they represent, in order to create a data base and evaluate their implementation. As well, those life plans that are orally transferred are expected to be recorded.

determinants: environmental, cultural, public services and transport, and metropolitan areas. Environmental determinants are those related to environmental protection and risk management included in Table 26. According to the ministry of environment, environmental determinants are the '*terms and conditions set by environmental authorities to guarantee environmental sustainability in territorial planning processes'* (MADS 2016, 7). These determinants are considered as hierarchically superior in relation to other planning instruments. Nevertheless, among the spectrum of possible environmental determinants, spatial planning regulations derived from the national environmental system (SINA) are not available because no regulatory frame is available. Therefore, most spatial environmental determinants set by the national level correspond to national parks and other categories of protected areas. Risk management appears to be a competence of municipalities, departments and districts (MADS 2016), which should consider risk in the formulation of territorial plans. Thus, the definition of environmental determinants relies mainly on regional environmental authorities.

Table 26. Environmental determinants according to law 388 (1997).

Actors	Expression
National environmental system (SINA)	Spatial planning regulations (zoning, land use)
National level authorities	Regulations concerning national level protected areas (national parks and forest reserves)
National and subnational level authorities	Policies, guidelines and regulations concerning risk management (natural menaces, human settlements)
Subnational level authorities (mainly Regional environmental authorities)	Regulations concerning: • Coastal zones • Protected areas (Management districts, soil conservation, forest reserves, regional parks) • River basins • Important ecosystems

Source: author's own compilation

On the other hand, Colombian regulations use the concept of ecological Structure, which can be divided into ecological main structure and ecological infrastructure, both of which correspond to the ecological structure of support (Van der Hammen and Andrade 2003). The ecological main structure was first defined for the Colombian context as '*the set of natural and semi-natural ecosystems that have such conditions of location, extension, connexions and health, that it guarantees the continuity of biodiversity integrity, the provision of ecosystem services'* (Van der Hammen and

Andrade 2003, 1). The concept of ecological infrastructure focuses on intervened ecosystems and urban areas; while the ecological structure of support is defined as the '*territorial expression of the natural ecosystems, agroecosystems, urban and built systems, that provide support and ensure long-term processes that sustain human life, biodiversity, ecosystem services provision and quality of life'* (p. 8).

None of these concepts, were part of environmental planning regulations a regulation about rural land-use planning incorporated the concept of ecological main structure as *'the set of biotic and abiotic elements that sustain territorial essential ecological processes, whose goal is the preservation, conservation, restauration, sustainable use and management of renewable natural resources, which provide supporting capacity for the socioeconomic development of populations'* [275]. This concept is used as a criterion to categorize rural land-uses and is assigned by territorial entities through territorial plans. In contrast, environmental determinants are established by regional authorities, Table 27 contains a comparison of both concepts, which are very similar. Nevertheless, there is little information regarding the role of these concepts concerning indigenous territories.

Table 27. Contrast between environmental determinants and ecological main structure.

Topic	Environmental determinants*	Ecological main structure**
Goals	Conservation and environmental protection, natural hazards prevention and risk management.	Preservation, conservation, restauration, sustainable use and management of renewable natural resources
Protected areas	Yes	Yes
River basin	Yes	No
Important ecosystems	Yes	Yes
Built and urban systems	No	Yes
Future scenarios (e.g. climate change)	Yes	No
Risk management	Yes	No
Actors	Environmental authorities	Environmental authorities and territorial entities

Source: author's own compilation based on law 388 (1997)*; decree 3600 (2007)**.

These concepts shape the way in which spatial environmental planning in Colombia is discussed. However, the characteristics of their implementation are not clear. The following

[275] Decree 3600 (2007), Art. 1.

sections identify what elements from the regional and municipal level should be considered for discussing environmental planning in *El Duya*.

8.1.1.1 The regional level

Regions do not correspond to a territorial entity in Colombia[276]; however, *Orinoquia* region has been discussed as a unit at least since 1960 (Caro-Caro et al. 2016). In recent years, the national development plan of 2014-2018 fostered the formulation of a 'master plan'[277] for the region around four priorities: *'Territorial planning, Water resources and environment, Infrastructure and economic development, emphasizing agriculture and tourism'* (MADS and MADR 2017, 35). The plan aimed at promoting agribusinesses while fostering '*approaches for reducing Agriculture, Forestry, and Other Land Use (AFOLU) emissions at landscape scale through sound land-use planning and innovative financial incentives'* (WB 2018, 2)[278]. Nevertheless, the current national development plan for 2018-2022 does not mention the project nor the master plan for *Orinoquia*. Currently, the national planning department works on a Model of territorial planning for *Orinoquia* (MOTRO)[279], in line with the national level general policy for territorial planning (PGOT). However, the contents of this model have not been published. These national-level policies appear to foster the tendencies in Land-use change identified for the region in relation to the increase in Oil palm cultivation (Romero-Ruiz et al., 2012); nevertheless, the spatial effect of these policies on the region has not been studied.

In contrast to the national-level planning policies; environmental determinants for the region are spatially defined. On the one hand, the areas included in the national protected areas system (SINAP) are spatially demarcated, each of which has a zoning and a management plan that are considered as hierarchically superior regulations[280], therefore, they cannot be objected through territorial plans. On the other hand, the regional authority for *Orinoquia* region, Corporinoquia, established regional environmental determinants in 2017 through Resolution 300.41.17.2193,

---

[276] The organic law for territorial planning (LOOT) of 2011 creates the 'planning and management regions' and regulates the 'administrative and planning regions', which involve the association of two or more departments. Administrative and planning regions could be transformed into a territorial entity; nevertheless, further regulations are required (art. 36).

[277] Defined as a strategy 'for the region's economic, sustainable, and inclusive development through the identification, prioritization, and management of strategic projects in coordination with other regional initiatives' (WB 2018, 2).

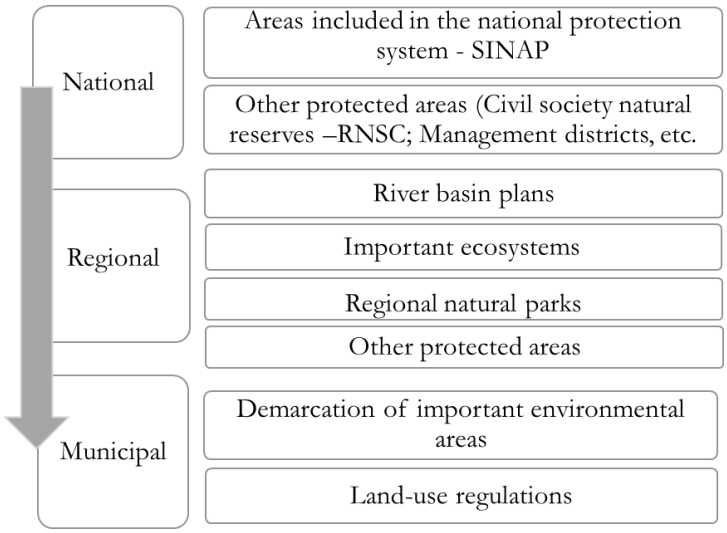
[278] In February of 2018, the project 'Colombia sustainable low-carbon development in *Orinoquia* region' was approved by the World Bank and made effective as of December of 2018, with the purpose of *'enabling conditions for sustainable and low-carbon landscape planning and management in project targeted areas'* (WB 2018, 1). It is not clear how this project is linked to the new NDP.

[279] Under the frame of the program '*riqueza natural*' funded by USAID, implemented by Chemonics Intern.

[280] Decree 1076 (2015). Art. 2.2.2.1.2.10.

which correspond to a higher level of hierarchy in relation to territorial plans. The depiction of this hierarchy is shown in Figure 19, where the national level determinants correspond to protected areas under different categories. And natural parks are shown separately because they are the only type of protected area that has been protected at the constitutional level by granting them the quality of inalienable (CCC 2010).

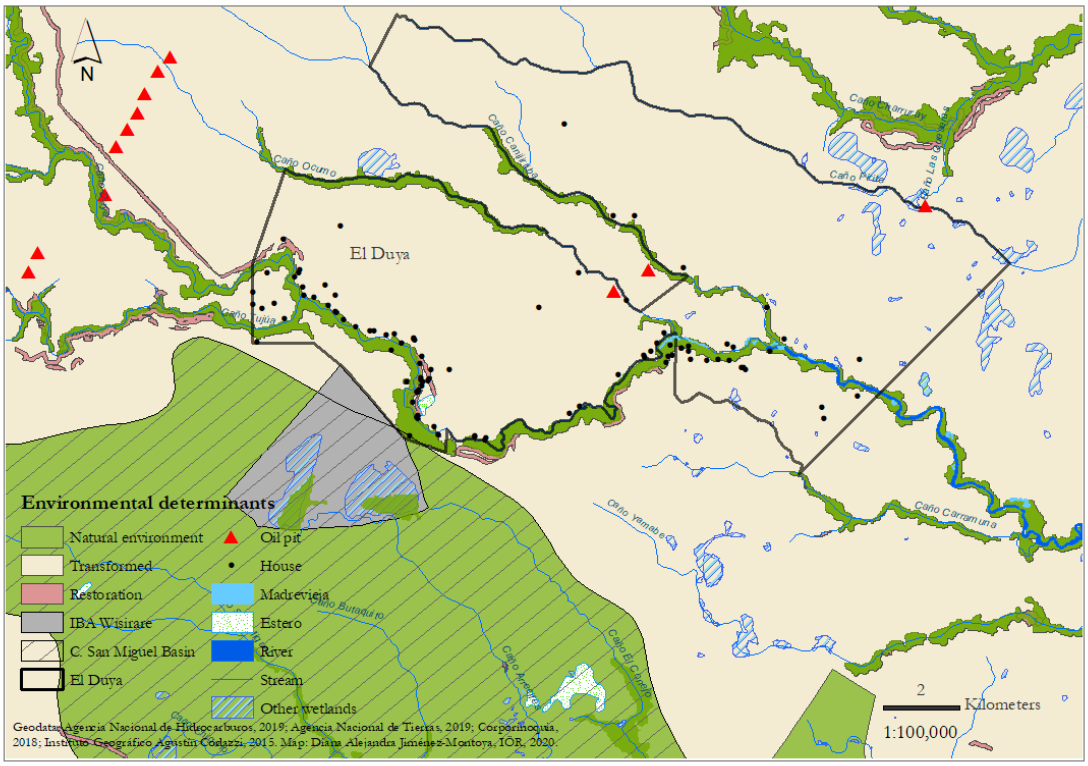
Figure 19. Hierarchy in environmental determinants



Source: author's own compilation. Among protected areas, only natural parks of the national and regional level are shielded against extractive activities (PNN, 2014). At the regional level, the environmental authority establishes determinants that should be incorporated by municipalities and later reviews if municipal plans have done so.

Corporinoquia established three types of determinants for the region: 1) natural determinants, 2) climate change and risk management and 3) transformed environment, which are discussed in Appendix H. Corporinoquia's resolution is not explicit regarding *resguardos* in the region. The shapefiles used to map determinants do not exclude *resguardo* areas and depict a zoning for *El Duya* in which most of it is considered as 'transformed environment'. Most of the gallery forests were classified as 'natural environment' and some areas were considered for restoration, located mainly in the margins of bodies of water. The zoning can be seen in Map 7, which portrays also the immediate surroundings of the *resguardo*. Nevertheless, none of the current norms regarding spatial planning provides information regarding the extent to which *resguardos* should incorporate the regulation established by Corporinoquia.

Map 7. Environmental determinants zoning for *El Duya*



Source: author's own compilation. According to this zoning, most of *El Duya* is considered as transformed. The natural environment corresponds to gallery forests and the areas for restoration are located next to the zones of natural environment, none of them is close to oil infrastructure.

At the department level[281], the government of Casanare adopted a territorial plan (PDOT) in September of 2019, which will be valid for the period 2019-2035. Nevertheless, it was not possible to access the contents of the plan in a timely fashion, therefore no further references are made. Another element corresponds to the regional plan for climate change in *Orinoquia* region (PRICCO), which used the inputs of a national level study[282] to produce guidelines for the regional, department and municipal levels under the scenario RCP 4,5 (CIAT and Cormacarena, 2017). Available maps are provided in a regional scale; therefore, it is difficult to grasp the details at the municipal or *resguardo* level. However, the plan does mention that Orocué is the municipality with the largest temperature increase for the region with 1,6° C (p. 46). Regarding Indigenous peoples, the plan indicates that they took part of the workshops conducted during its formulation; nevertheless, the document provides little information that

[281] Departments can produce territorial plans which are conceptualised as a legally binding instrument for Departments and the municipalities located within its boundaries (COT 2016).
[282] The national institute for environmental research (IDEAM) produced a report with the analysis of vulnerability and risks linked to Climate change under scenario RCP 6,0.

can be related to the *resguardo* level. At the department level, 40 adaptation and mitigation measures are provided for Casanare, where Orocué is mentioned in relation to six of them[283] (CIAT et al. 2018). Nevertheless, there are no clear guidelines about how to incorporate these recommendations into territorial plans.

8.1.1.2 The municipal level

The currently valid municipal territorial plan of Orocué (EOT) corresponds to the one formulated for the period 1998-2007. It was updated in 2013 and was evaluated by Corporinoquia; nevertheless, the process was stopped because of the opposition of the municipal planning council[284]. Both documents were reviewed; however, it is the outdated plan the one that is legally binding at present. The 1998-2007 EOT establishes territorial planning units or zones: 1) areas of protection, conservation, high sensitivity (special management); 2) areas for protection-production; 3) areas of agricultural development with technical management and 4) areas of agricultural development in need of minor interventions. Among these, *El Duya* is mentioned in relation to the gallery forests found in the margins of *Caño Duya*, which are included as part of the first two zones. Then, the margins of this river and the high parts of the *resguardo* are mentioned as suitable for agricultural and agro-industrial activities respectively. The mapping of these four zones; however, is not available. As well, this plan indicates that a project for the basin management of *Caño Duya* and *San Miguel* should be implemented. The plan for the former has not been made while the one for the latter is ongoing, although not as a result of the implementation of this EOT[285]. Evidence of further specific programs, projects or regulations was not found.

On the other hand, the document that initiated the update indicates that the Salia *resguardos*

'*will make their own norms for the use of strategic ecosystems and their natural resources in the short term and should not go against the norm established in this review and adjustments for the environmental zoning in the*

[283] Cattle ranching; vulnerable settlements relocation; vector control; irrigation; soil restoration; cultivation of cacao, timber trees and rubber.
[284] According to the representative of the council that was interviewed during fieldwork.
[285] This was the outcome of a regional judgement that urged Corporinoquia to formulate this Plan, in relation to the potential drilling in this basin as part of the development of *Llanos* 29 block, which would affect the urban water supply system of Orocué. See judgement 850012333002-2014-00218-00 issued by the Casanare administrative tribunal.

land uses for productive development and reserve for the conservation and protection of the environment and natural resources'[286] (Municipality of Orocué 2013, 66).

The document further states that it includes indigenous proposals and that it '*does not threat Indigenous peoples' rights to use their own law or superior law, in coordination with governmental entities of the majoritarian society*' (p. 66). Nevertheless, the paragraph does establish a hierarchy of the municipal planning over Salia planning. As well, the document states that *resguardos'* settlements require '*agreed solutions in order to adjust them and give them order'*[287]. According to indigenous interviewees at the *resguardo* and municipal level, the updated EOT did not have significant involvement of Salias nor were Salia proposals included, not even the ones included in their 2005 life plan. Further analysis is hindered by the current uncertainty created by the lack of resolution regarding its updated EOT[288].

Nevertheless, in addition to the territorial planning expressed through the EOT or the lack of it due to the problems in the update, oil exploration and exploitation occurs at the municipal level but is not controlled by the municipality. Currently, there are 34 blocks whose areas overlap the municipality at some extent, some of them cover other municipalities and others are bounded by Orocué's boundaries. The stage of development of these blocks is varied and their characteristics are context dependant, therefore, the analysis was limited to the blocks that are more relevant for *El Duya*. Nevertheless, some general characteristics should be mentioned at this point:

- The bounding and assignation of blocks does not consider territorial plans.

This is a process that occurs on the national level, where the national hydrocarbons agency (ANH) releases an online map every year with the location of the blocks. The shapes and sizes of the blocks do not correspond to subnational territorial units.

- Blocks can overlap all kinds of land covers.

[286] According to the title '2.5.3. *Norma y tratamientos para los resguardos indígenas'*. Document version of 2013.
[287] According to art. 53 of the municipal agreement N° 22 (2009), which initiates the review of the plan.
[288] The municipality of Orocué appeared as included in the national program '*POT Modernos'* of the DNP, which aimed at promoting the update of the territorial plans; nevertheless, no progress has been made so far. See slide 50 of the presentation '*Plan Maestro de la Orinoquía*': DNP. 2016. *Plan Maestro de la Orinoquía*. September of 2016. https://www.cccasanare.co/wp-content/uploads/2017/02/Plan-Maestro-de-la-Orinoqu%C3%ADa-2016.pdf

The exclusion of portions of the block because of their overlapping with natural covers depends on the location of infrastructure, which is approved through an environmental license.

- Block's environmental licenses may provide spatial environmental orientations

The national authority, when evaluating the Environmental impact assessment provided by the license petitioner, may require the latter to implement zonings that result in keeping buffer areas around public facilities, for example[289]. Nevertheless, these orientations depend on the text of each license.

8.1.1.3 Sacred sites

So far, there is no formal recognition of indigenous sacred sites criteria for environmental planning. Recently, a manuscript was produced by the Colombian institute of anthropology and history (ICAHN), which contains guidelines for the formulation of a public policy about sacred sites, which is a result of the agreements that indigenous organisations reached with the government of Colombia through the permanent negotiation roundtable (MPC). In 2014, a decree[290] was enacted to establish mechanisms to facilitate the recognition and titling of ancestral and traditional indigenous territories, which would incorporate them into the legal regime available for *resguardos*. Correspondingly, those sacred sites that are found within the recognised ancestral or traditional territories, would be subject of indigenous planning.

As a result of this recognition, there currently is one case in which there has been an advance in the demarcation of ancestral territories, including sacred sites, which corresponds to the case of the Black Line. In August 2018, a decree[291] was enacted which recognises sacred spaces as part of the ancestral territory of the Arhuaco, Kogui, Wiwa and Kankuamo peoples in the mountain range known as *Sierra nevada de santa marta*, found in the north of Colombia. According to this decree, sacred spaces correspond to the ancestral and traditional territory (art. 4); however, a series of 348 points or areas have been defined in the decree, where the four Indigenous peoples should be allowed to visit and to perform the activities that they deem necessary to maintain the sacredness of the place, even if these areas are currently found in

[289] The license for the block *Llanos* 30 illustrates this example. See Res. 10 (2012) by ANLA.
[290] Decree 2333 (2014).
[291] Decree 1500 (2018).

private property. As well, the decree stablishes that all interventions over these sites should consider the spiritual and environmental value of the territory. In addition, measures towards preservation and recovery of wildlife should be implemented (art. 9). However, no other regulations regarding sacred sites are available.

The Salia people obtained a small grant from the Global Environment facility in order to conduct a project for studying biodiversity in their sacred sites, both inside and outside of the boundaries of the eight *resguardos*, under the approach of indigenous community conserved areas (ICCA). The project was implemented between August 2017 and December 2018; however, the results are not available for public consultation. During fieldwork, it was possible to discuss the aims of the project with people from the traditional Salia authorities' association of Orocué (ASAISOC) and *El Duya*, which appeared to move in the direction of consolidating the proposal contained in the territorial mandate about 'strategic areas for cultural and ecological protection'. Nevertheless, it was mentioned that there was not a clear path beyond biodiversity inventories and that regulations for sacred sites needed planning. According to the interviewees in *El Duya*, there have been several times in which they have mapped the location of sacred sites in the *resguardo*, some of which have occurred as a result of the environmental impact assessments conducted by the oil companies. However, the interviewees indicated that control over sacred sites was not effective enough, since most youngsters were not aware of their location and the proper way to behave in them.

So far, there is no evidence of advancement in the recognition of Salia traditional territory; neither at the municipal level through the territorial plan nor at the national level through the national sacred sites policy, still under construction. Moreover, when asked about the topic, the answer provided by the ICAHN states that no action has been taken about the Salia people.

8.2 Planning in *El Duya*

Salia planning is reflected in their 2005 life plan, which was updated in 2011 and further developed through several mandates. Among these, the 'territorial mandate' constitutes the main spatial environmental planning instrument, which was enacted to

'*provide order to our territories, to ensure the harmony of life, to secure our persistence in time. That exercise of ordering is based on our distinct cultural identity and reflects it (…) In this exercise, all of the components of*

our life plan are involved in an integral way: organisation and own government, identity and culture, territory and integral environment, production and sustainable economy' (Pueblo Salia 2012, 8).

The strategies designed to address the core concerns of the mandate include several levels of action, as described in Table 28. These strategies appear scattered along the document; however, they can be grouped in three axis which are called here 'Salia livelihoods'; 'institutional arrangements' and 'Spatial environmental planning'. The strategies respond to the final goal of broadening the spatial control of Salias over rural areas in Orocué, while guaranteeing ecosystems enhancement through restoration and environmental impact management.

Table 28. Strategies contained in the territorial mandate.

Strategical axis	Level of incidence	Aim	Actions
Salia livelihoods	*Resguardos*	Securing Public services in all *resguardos*	Public services provision and integrated waste management
	Resguardos	Mitigation of livelihoods' environmental impacts	Establishment of non-native grazing areas Breeding of wild species for protein provision
Institutional arrangements	Household	Promotion of environmental awareness among Salia population	Environmental and communal education activities
	Resguardos	Revitalization of Salia institutions	Cultivation medicinal plants gardens
	Salia territory	Risk management	Training for risk management
	Salia territory	Monitoring	Training of indigenous guards for looking after forests
	Salia territory	Strengthtening of indigenous authorities	Training for the exercise of environmental authority in Salia territories
Spatial environmental planning	National	Declaration and protection of strategic areas of cultural en ecological protection and conservation	Lobby for the inclusion of this *sui generis* category in the national legal frame during the process of prior consultation for the reform of norms about protected areas. As well, Salias aim at the recognition of indigenous authority in the implementation of environmental programs and management of protected areas.
	Salia territory	Enlargement of *resguardos*	Purchase of adjacent lands

	Salia territory	Ecosystem restoration	Reforestation with native species; recovery and cleaning of *esteros*; recovery of ecological corridors

Source: author's own compilation based on Pueblo Salia, 2012.

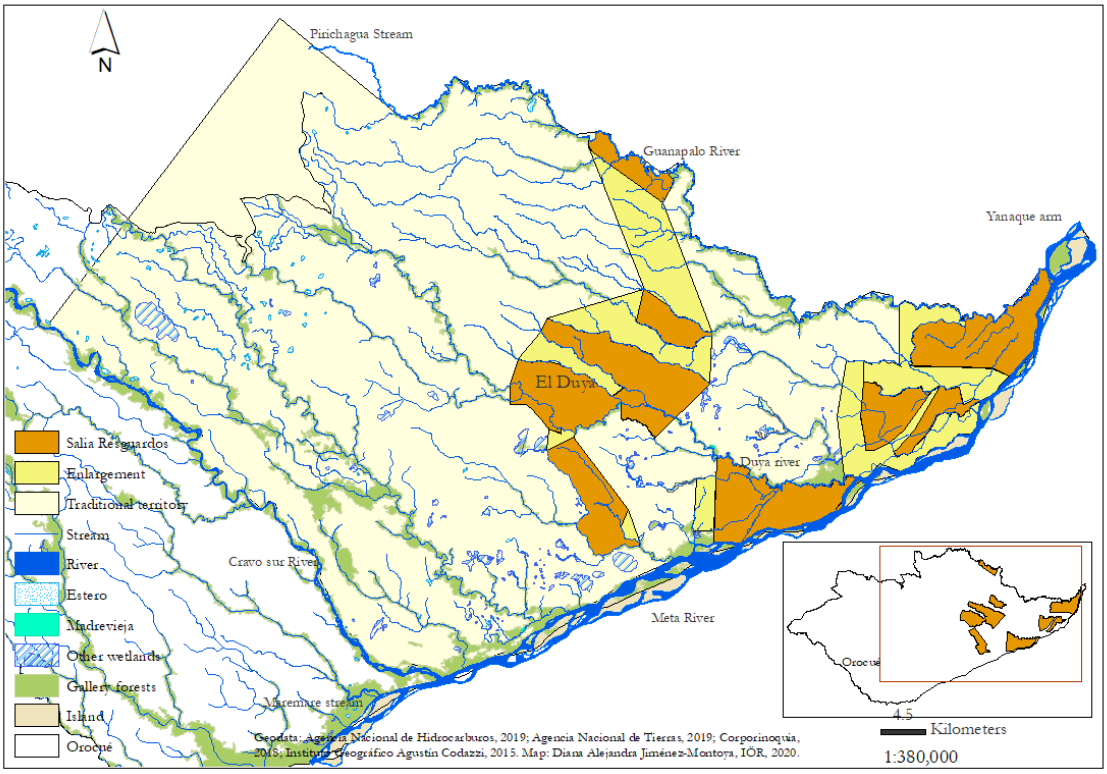
Thus, the territorial mandate considers the operational (household), collective-choice (*resguardo*) and constitutional (Salia territory) levels. Nevertheless, the operationalization of these strategies is not clear. The mandate provides guidelines about how Salia territories should be developed, building on the assessment of elders about the transformations of the territory, identifying threats[292] and the way to tackle them. The next section discusses the contents of the mandate that are relevant for *El Duya*.

8.2.1.1 Constitutional level strategy: unification

The Salia people formulated a *resguardo*'s unification strategy that is now the pillar of their territorial demands. Already in 1998, the traditional Salia authorities' association of Orocué (ASAISOC) produced a document[293] that depicted a proposal for the enlargement of the *resguardos*. The life plan of 2005 envisaged two groups of enlarged *resguardos* by 2015, where the first would include *El Duya*, *El Consejo*, *San Juanito*, *El Suspiro* and *El Médano*; while the second would include the *Paravare, Saladillo* and *Macucuana*. Moreover, it stated that they expected to have a unified area by 2025 (Pueblo Salia 2005, 66). Later, the life plan update of 2011 defined the unification as an *'enlargement until the boundaries of each resguardo meet those of the neighbouring ones, which would be achieved through pairing of nearby resguardos'* (Pueblo Salia 2011, 67). The update contains a depiction of what they call the recovery of the territory, which was reworked in Map 8. According to Salia leaders, this strategy constitutes the core of their proposals in relation to territorial planning.

[292] The appendix of this chapter expands on the characteristics of these menaces.
[293] A petition made to the regional director of INCORA. This document was provided by members of ASAISOC during fieldwork.

Map 8. Enlargement of *resguardos* as proposed in 2011 and ancestral territory.



Source: author's own compilation based on Pueblo Salia (2005, 2011). The yellow areas show the intended enlargement of *resguardos* according to the life plan update of 2011. If achieved, the *resguardos El Consejo*, *El Duya*, *El Suspiro* and *El Médano* would be connected in between them. *San Juanito, Paravare, Macucuana* and *Saladillo* would be in the other group. The traditional territory is bounded by the place known as *Algarrobo* in the *Cravo sur* river, from there a straight line towards *Caño Pirichigua,* then south to the *Guanapalo* river downstream until the mouth of *Pauto* river, then going upstream *Meta* river up to the mouth of *Cravo sur* river and going upstream from there until *Algarrobo* (Pueblo Salia 2005).

Nevertheless, *resguardos* remain separated from each other. Moreover, when asked about the implementation of the mandate, indigenous interviewees indicated that it has not been developed since its formulation in 2012. However, some of the information provided by Corporinoquia in response to a petition contradicts this statement. Moreover, a document of 2018 in the dossier of *Garcero*-C where the national lands agency (ANT) informs about procedures for the enlargement of the *resguardo El Médano*, located north from *El Duya*.

8.2.1.2 Social-ecological-level strategy

The Salias of *El Duya* have crafted a strategy to tackle problems related to the extraction of natural resources as well as to land grabbing attempts which affect the *resguardo* as a whole,

hence the denomination of social-ecological. The strategy is referred to as 'looking after the territory', which has a structural and a dynamic component. This strategy was identified through the information gathered during fieldwork, that means that they are not described in the territorial mandate and is depicted in Map 9.

The structural component is based on the location of houses in the outskirts of the *resguardo*, mainly in proximity to roads. The houses represent landmarks that inform about the entering boundaries of the *resguardo* and deter occupation of the savannas nearby. As well, the dwellers of such houses act as watchers, who are aware of the entrance of foreigners and may inform the indigenous guards of trespassing. Nevertheless, not all of the boundaries of the *resguardo* can be watched this way, because the location of houses is limited by ecological conditions. Furthermore, the perimeter of the *resguardo* adds up to 80 km, including several roads, which makes it difficult to effectively stablish surveillance.

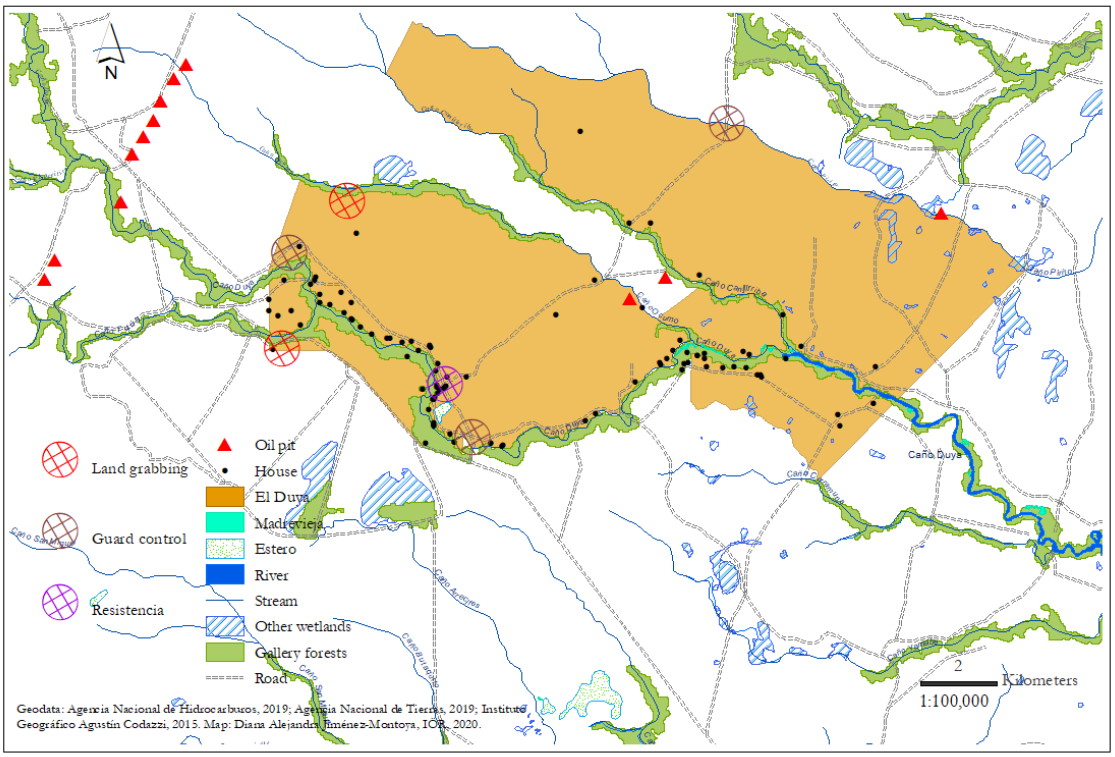
The dynamic component results from the interaction of the indigenous guard, the *cabildo* and *resguardo*'s dwellers. The members of the indigenous guard move around the *resguardo* on a daily basis, using the road system to patrol, especially where there are no houses. The dwellers contribute with the identification of foreigners and with the circulation of information towards the guard and the *cabildo*, which then respond to an eventual intrusion. The presence of the indigenous guards in certain places is used as a way to deter potential unwanted visitors or occupants, therefore, some of their activities involve standing on the busiest roads, where they sometimes halt vehicles to inquire for the destination and identity of the passengers. Moreover, members of the guard take shifts to ensure that no vehicles circulate in night hours through the road that oil companies use for transporting crude oil. The guards place physical obstacles that are removed every morning.

Roads play a critical role in their strategy for territorial control. A road hub is located in *Piñalito*, through which oil tank trucks must pass all year long, as well as all inhabitants of Orocué traveling to the capital city Yopal[294]. Salias use their ability to block the roads as a tool for negotiation, mainly to put pressure on oil companies. According to the interviewees, they have had to block the road when dialogue instances have not been successful with companies, since the halting of oil transportation causes monetary losses for the companies. This blocking of the road with the goal of negotiate is called a '*resistencia*' and takes place a few meters away from the main settlement of the *resguardo*, right in front of the communal store, where the road

[294] Travellers can use an alternative road during the dry season; however, this road is the only way during the rainy season.

Marginal la nevera-Orocué and *El Duya-Guanapalo* river intersect. The *cabildo* and the indigenous guard organise the shifts to keep the road blocked in which men and women take part. That way, they guarantee the presence of people throughout the day so transportation can be halted.

Map 9. Social-ecological system and territorial strategies.



Source: author's own compilation. The red circles represent the areas where land-grabbing problems have been reported. The brown circles correspond to points in which the indigenous guard exerts control over the roads and the purple circles correspond to the sites where the *resistencia* can be organised.

Other municipal roads do not comply with basic requirements for heavy load transport and are usually deteriorated because of the lack of pavement and high level of rainfalls; therefore, oil companies have no alternative way to transport crude oil than the road of *El Duya*. This explains why *resistencias* are effective. According to the interviewees, the way in which *resistencias* are developed can be modified at any moment, since a great share of the inhabitants of the *resguardo* are involved in them. Thus, it is relatively easy to call for a general assembly if decisions must be made. Nevertheless, *resistencias* are implemented only when Salias consider that they have no other options. Road blockages are costly for Salias because they constitute an extra effort for dwellers, who need to put time into these activities in addition to their

regular livelihoods. Furthermore, *resistencias* involve security risks since the municipality continues to be affected by the presence of paramilitary groups, in a national context of increased violence against organised civilians since 2016[295]. Therefore, Salias of *El Duya* only resort to these *resistencias* on extreme cases. However, the r*esistencias* are inextricably related to oil exploration and extraction, therefore, the implementation of these activities and their implications for environmental planning in the *resguardo* is discussed.

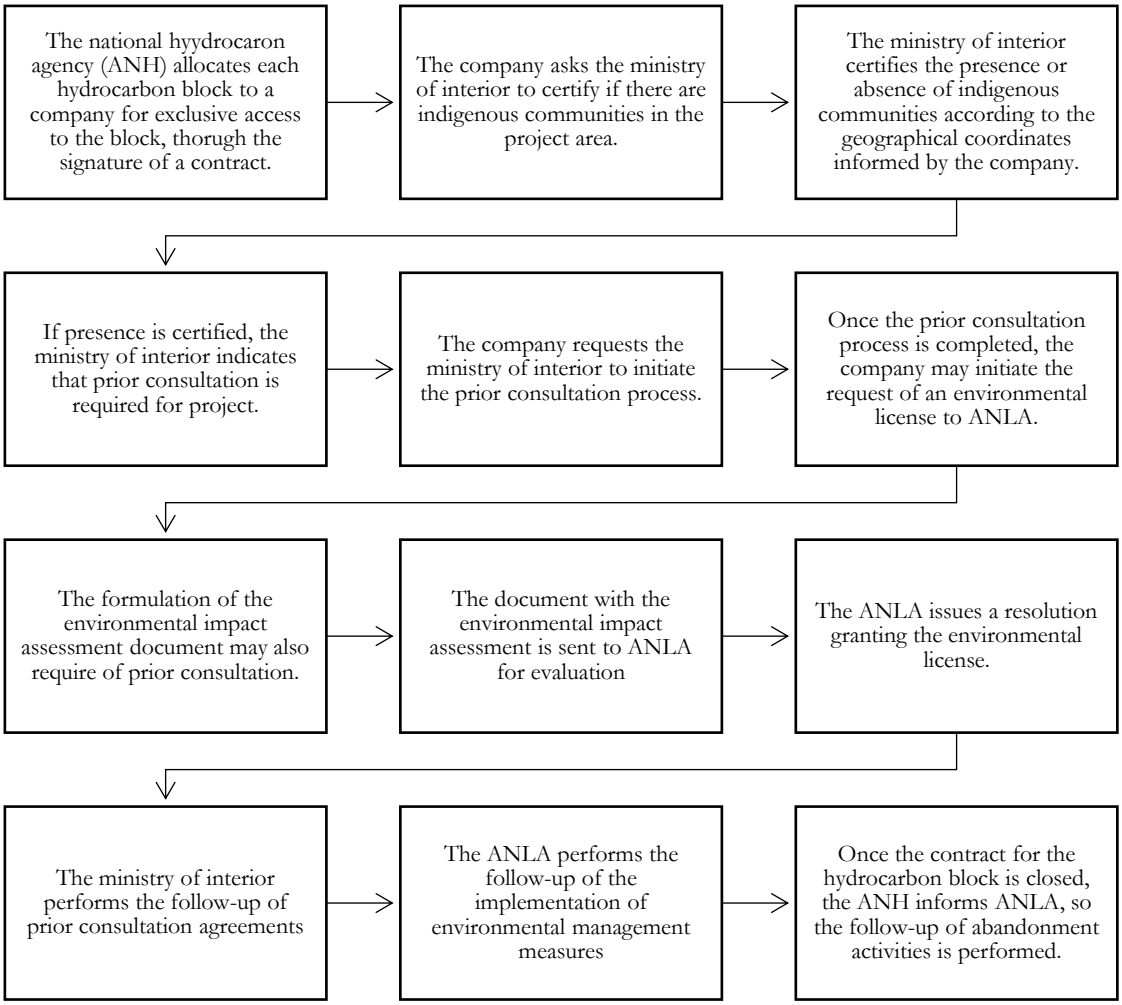
8.3 Oil exploration and extraction concerning *El Duya*

Environmental regulations stablish that most hydrocarbons-related activities require an environmental license issued by the national authority, the National environmental licensing authority (ANLA). The environmental impact assessment must be carried out by the company, usually through a consultancy organisation, which is sent to the ANLA for evaluation. Once the assessment process and the management measures are approved, the ANLA grants an environmental license for the project, which stablishes the frequency with which the companies should produce compliance reports to be sent to the ANLA. The reports are evaluated in the headquarters in Bogotá, from where staff is sent for field inspections. An environmental license usually includes all permits for using natural resources and are valid throughout the life cycle of the project. However, the regional authority must provide some permits for the use of natural resources. Finally, whenever the project under licensing is overlapped with indigenous territories, the requirement of prior consultation must be met too. The process is depicted in Figure 20.

According to the national legal framework, neither Indigenous peoples nor environmental authorities take part in the process of deciding whether hydrocarbons should be exploited or kept in the subsoil. However, the ANLA may halt hydrocarbons exploitation if the environmental impacts of these activities are too serious. The legal frame establishes jurisdiction of national and regional environmental authorities in licensing processes; therefore, regional authorities have no competence to controvert decisions made by the ANLA.

[295] See the report in http://www.defensoria.gov.co/es/public/contenido/7399/Homicidios-de-l%C3%ADderes-sociales-y-defensores-de-DDHH.htm

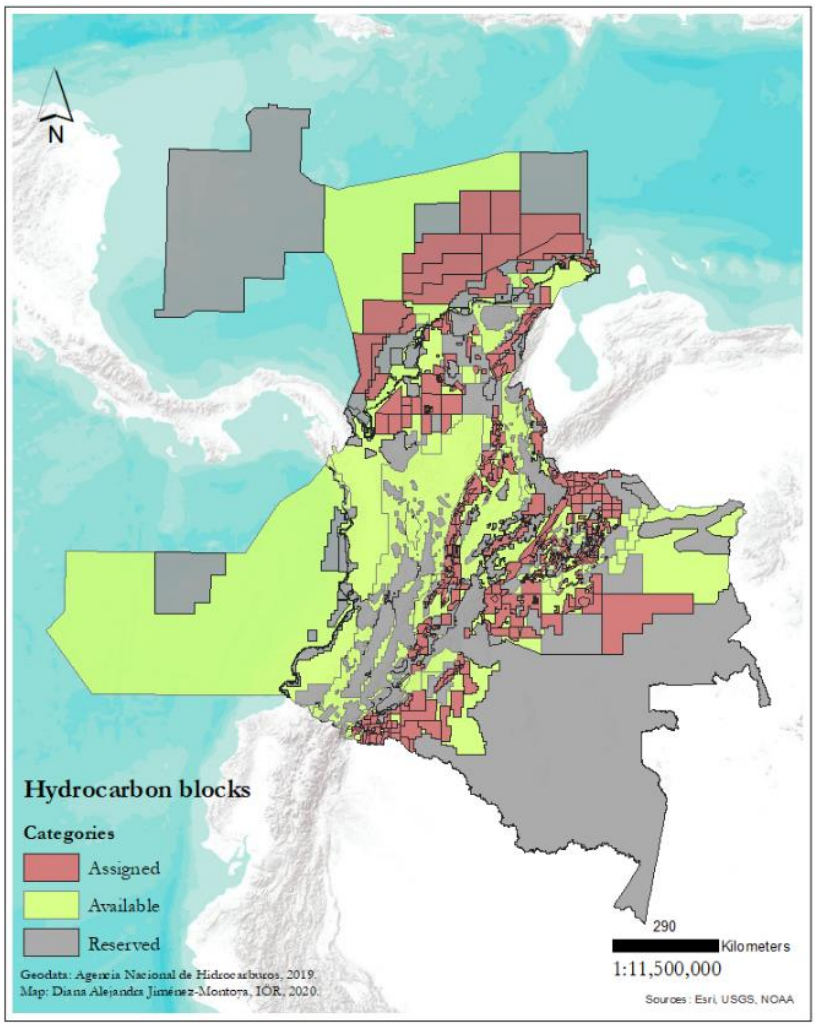
Figure 20. Formal procedures prior to hydrocarbons exploration and extraction



Source: author's own compilation based on presidential guide 10 (2013); decree 1066 (2015); ANLA, 2017.

Since the national norms did not fully regulate seismic acquisition activities, each regional environmental authority established the conditions for these activities in their jurisdiction. Corporinoquia first regulated seismic acquisition in 2007 and current regulations were established in 2010. These regulations require that companies perform environmental assessments and submit a document with the management measures for the impacts of seismic acquisition. In this case, the companies are also required to provide information regarding the need to conduct a prior consultation process with Indigenous peoples. Furthermore, Corporinoquia states in its resolution that work meetings should be arranged with indigenous communities affected by seismic acquisition, regarding the evaluation of environmental management measures and the granting of permits for using natural resources.

Hydrocarbon blocks are distributed throughout the country. According to the 2019 map of hydrocarbon block published by the national hydrocarbons agency (ANH), the country is divided into areas which are categorized as reserved, available and assigned, as shown in Map 10. It should be noted that these categories are mutually exclusive for the ANH but not for the *resguardos*.



Map 10. Hydrocarbon blocks in Colombia for 2019.

Source: author's own compilation. This map corresponds to the information provided by the national hydrocarbons agency of Colombia (ANH) for 2019, denominated as 'map of Lands'. Assigned blocks may in different stages of development (exploration, production, closure).

Reserved areas are defined as those spared for reasons related to '*energy policy, national security, geological, environmental, social characteristics, or because studies indicate valuable exploratory information*'

(ANH 2019). Available areas are those which have not yet been assigned. Finally, assigned areas are those under exploration, exploitation or technical evaluation. Currently, 180 *resguardos* have been overlapped at some extent by hydrocarbon blocks, which correspond to the 25 % of the 715 existing *resguardos*. Additionally, overlappings with areas classified as available affect other 104 *resguardos*.

Exploration activities were first carried out in what today is *El Duya* during the decade of 1940; nevertheless, they did not lead to extraction back then. Another attempt was made during the decade of 1980 which was not successful either. However, oil extraction-related activities[296] have been continuously carried out since 1994 until present day. Since 1994, the *resguardo El Duya* has gone through 15 prior consultation processes, 12 of which correspond to oil extraction-related activities. Prior consultations in relation to oil projects correspond to seven hydrocarbon blocks, six of which corresponded to overlappings with the *resguardo* and one corresponded to seismic acquisition activities whose went through *El Duya*. Among these projects, only the production field *Caño Duya* has installed infrastructure inside the boundaries of the *resguardo*. Nevertheless, some blocks located in neighbouring areas have not been required to conduct prior consultation. The ANLA may also require the owners of a project to expand their activities beyond the area of influence considered for the environmental impact assessment. Nevertheless, only the ministry of interior decides over the need for a prior consultation process.

Since 1994, there have been several oil companies of relevance for *El Duya,* as shown in 13.7 Appendix G. From 1994 to 1997, the companies Kelt S.A and Conequipos were active in the *resguardo*. Then, Perenco acquired their permits and became the only active company for a decade. Other companies such as Hocol S.A.; Columbus Energy; Parex energy; Interoil; Vetra[297], arrived at the area as of 2007. The analysis of *El Duya* shows how oil companies have repeatedly exchanged between them the permits to conduct oil exploration and exploitation activities, which result from internal arrangements between the companies which are then

[296] Oil extraction occurs through several stages, from exploration to closure. Exploration frequently involves seismic acquisition and exploratory drilling, which may result in productive or dry wells. In all cases, once the activity is finished, there must be a closure process to restore the used site, as much as possible, to the state prior to the intervention.

[297] As of 2003, the Colombian government created an agency, the ANH, for the promotion of oil and gas exploitation. As well, a new system was introduced to attract investors.

notified to the ANLA. However, once the process of obtention of an environmental license is formalized, the change in the license holder does not lead to a new licensing process[298].

Consultations have involved eight oil companies: Kelt Colombia; Perenco; HOCOL S.A.; CONEQUIPOS; Columbus Energy; INTEROIL Colombia E & P; PAREX Energy Colombia; VETRA Exploracion y Produccion Colombia S.A.S. Among these, only one has remained constant throughout the processes of prior consultation and development of oil extraction-related activities, which can be observed in Table 29. This poses an additional challenge when tracking the process of request, study and approval of environmental licenses. The review of these processes suggests that the people of *El Duya* have had no involvement in decision-making over oil extraction-related activities affecting their *resguardo*.

Table 29. Oil extraction-related projects in *El Duya* between 1994 and 2019.

Project	Prior consultation process	First environmental license holder	Environmental license holder in 2019
Electric line and conduction line between completion pit *Caño Duya*-1 and station *Sardinas*. Block *Corocora*-C	1994: requested by Kelt Colombia	1995: Kelt Colombia	Perenco Colombia Limited, ceded in 2002
Crude oil truck transportation from pit *Caño Duya*-1 to station *Sardinas*. Block *Corocora*-C.	1994: requested by Kelt Colombia	1996: Kelt Colombia	Perenco Colombia Limited, ceded in 2002
Seismic acquisition *Caño Duya*. Block *Corocora*-C.	1999: requested by Kelt Colombia	----	----
Exploratory drilling. Block *Leopardo*	2007: requested by Hocol S.A.	2008: Hocol S.A.	Interoil Colombia E&P, ceded in 2014
Seismic acquisition *Oropéndola* occidental. Block *Oropéndola* occidental	2007: requested by Conequipos	----	----
Seismic acquisition *Lince*. Block *Lince*	2011: requested by Interoil Colombia E&P	----	----
Seismic acquisition. *Llanos* 29	2009: requested by Columbus Energy	----	----
Exploratory block. *Llanos* 29	2012: requested by Parex Energy Colombia	2012: Parex Energy Colombia	Parex Energy Colombia, ceded in 2012

[298] Updates might be required, according to the possible changes that the ceding of the license involves. The ANLA evaluates the conditions in every case.

Block *Llanos* 78	2014: requested by Vetra EyP	----	----
Modification of environmental license block *Llanos* 47	2018: requested by Interoil Colombia E&P	----	----

Source: author's own compilation based on ministry of interior, 2019; ANLA-VITAL information, 2019.

The people of *El Duya* have participated in prior consultation processes, which the legal frame requires to be carried out before the environmental licensing process initiates. The ANLA requires permits petitioners to consider social, economic and archaeological aspects, therefore, the petitioner must include in their environmental impact assessment document and subsequent reports, information about how the impacts over these spheres will be managed. The logic behind permits and environmental licenses relies on the understanding that oil extraction related activities are considered as potential generators of serious environmental impacts, therefore, they are required by the environmental authorities to provide the plan for the management of potential impacts. Those projects in which the ministry of interior did not certify the overlapping with the *resguardo*, do not require of any kind of involvement of the people of *El Duya*. Nevertheless, the effects of some of these projects over the *resguardo* can be identified. On the one hand, neighbouring projects require of oil trucks and machinery to pass by the main road of *El Duya*; on the other hand, projects located upstream affect water bodies downstream.

8.3.1 Projects of interest for *El Duya*

The review of the documentation published by the national environmental licensing authority (ANLA) and its contrast to the information obtained during fieldwork, suggests that three projects have caused environmental impacts that directly concern the *resguardo El Duya*. One of these was not subject of prior consultation, the block *Garcero*-C; however, it is included in the analysis because of its proximity to the stream *Caño Duya*[299]. The second corresponds to project *Leopardo*, which underwent prior consultation because the block overlaps *El Duya*, even if its infrastructure is located outside the *resguardo*. Finally, the contract *Corocora*-C, which built part of its infrastructure inside the boundaries of the *resguardo,* including a pit. The three

[299] There are approximately 7,6 km between *Sardinas* station and the boundary of the *resguardo* following the meanders of the stream *Caño Duya*. The distance measured through a straight line between both points is of approximately 4,7 km.

projects are reviewed in the following sections and *Corocora*-C is explained with more detail because of its location.

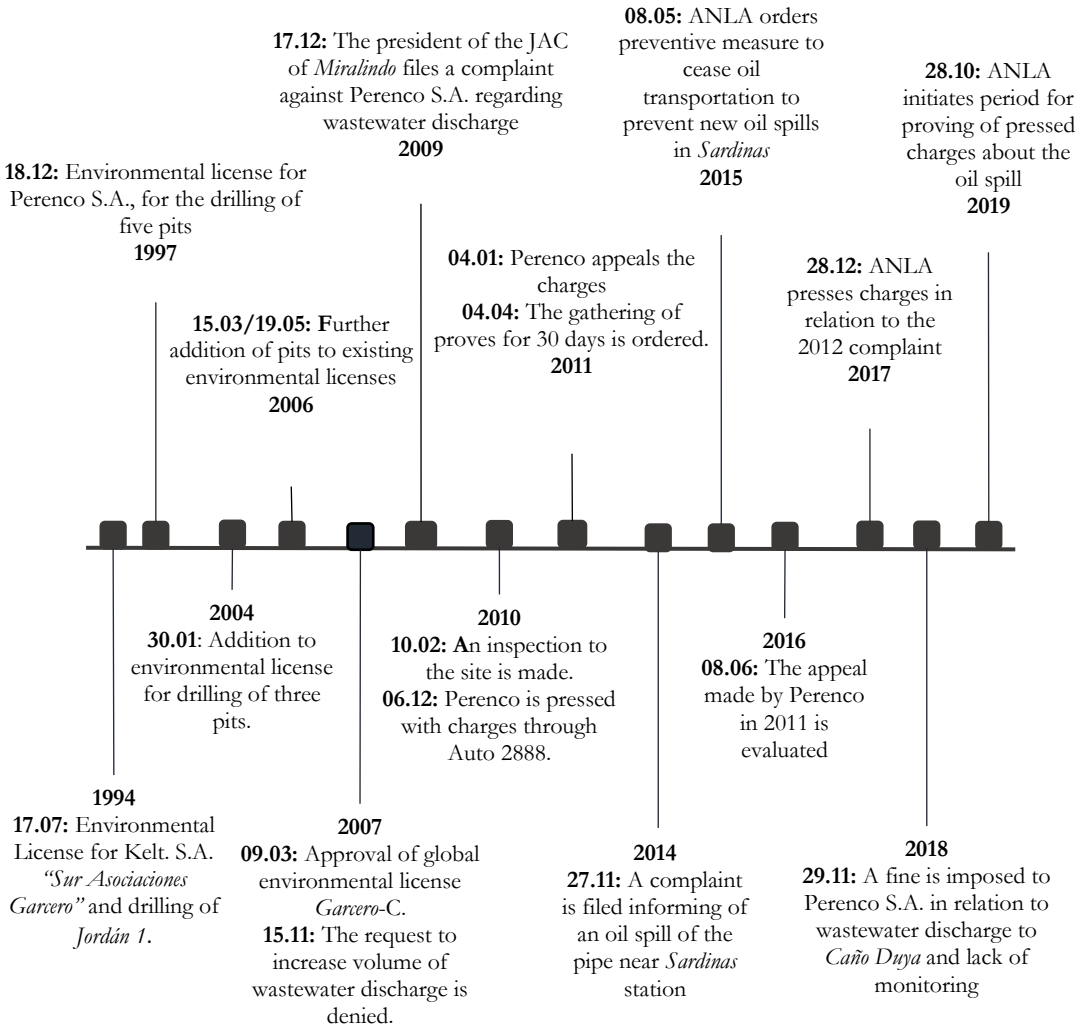
8.3.1.1 Block *Garcero*-C

This exploration and exploitation block obtained its first environmental license in 1994, issued by the ministry of environment to the company Kelt Colombia S.A, later Perenco Colombia S.A. This block includes a main station, *Sardinas*; three sub-stations, *Jordán Norte, Jordán y Paravare*; and 26 pits with multiple functions. As well, the main station collects the production of other sub-stations such as *Guarilaque, Guanapalo*, *Caño Duya,* and the stations Vireo and *Oropéndola* (ANLA 2018a, 3). In 2009, peasants dwelling in the surroundings of the station filed a complaint warning about the deterioration of the stream *Caño Duya,* which flows next to *Sardinas*. The complaint informs also about leaking pipes over this stream, which triggered the action of the environmental authority (ANLA 2018b, 18). After a process of nine years, which is shown in Figure 21, Perenco Colombia S.A. was found responsible of the pressed charges and was imposed a fine of $2573927550 Colombian pesos (COP), which corresponded to 0,65 % of the actives of the company in 2018.

The dossier does not mention the people of *El Duya* in relation to this incident, because the project's license does not consider them to be potentially affected by environmental impacts. Nevertheless, most of the population of the *resguardo* is settled downstream of the water body *Caño Duya*, where many families wash their clothes, go swimming and obtain fish, which provides indication of the exposure of the people of the *resguardo* to the impacts of block *Garcero*-C. Despite the imposing of the fine in 2018, the extent of the impacts caused in 2009 was not assessed. According to the dossier, Perenco informed Corporinoquia of a problem in their functioning of the pipe '*Guarilaque-Sardinas'* on November of 2009. The complaint was filed by the community on December of 2009 and the officers of the national environmental licensing authority (ANLA) performed a field visit on February of 2010. As a conclusion of the inspection, the officers of ANLA indicated that they could not stablish whether the water body *Caño Duya* was polluted, but they found that Perenco had failed to prove their compliance with the environmental management plan (EMP)[300].

300 The resolutions 2888 (2010) and 2216 (2018) contain excerpts of the technical report including this affirmation, issued by ANLA with the number 808, on the 19th of May of 2010. The conclusion of the field officers is reached as a result of identifying organoleptic characteristics of soil and water in the site. See: Ministerio de ambiente, vivienda y desarrollo territorial (MAVDT). 2010. *Auto Nº. 2888*. http://www.minambiente.gov.co/images/normativa/Otros/Autos/2010/auto_2888_2010.pdf

Figure 21. Timeline of block *Garcero*-C



Source: author's own compilation based on ANLA, 2019.

Since the ANLA relies primarily on information provided by the license holder, the absence of monitoring reports contributed to stablish that the company did not comply with their obligations. Nevertheless, relying on this information also kept the ANLA from proving that the company had produced any damage over natural resources, which led to the dismissal of this charge[301]. The dossier contains no information about the impacts caused by the company, neither by the increase in the volume of discharged water nor by the leakage problems. As well, the succession of events indicates that Corporinoquia and ANLA barely enforced the obligations acquired by Perenco in the environmental license. Moreover, it is evident that

[301] This is stated in the technical report 01864 made on the 27th of April of 2017, which provides the technical support for the imposition of the fine in 2018.

ANLA and Corporinoquia did not coordinate between them to guarantee the protection of ecosystems.

According to the technical report 01864 (2017) issued by the ANLA; the 1997 environmental license forbade any direct wastewater discharge and indicated that the company should inform Corporinoquia on this regard. As well, the company was mandated to ask Corporinoquia for the relevant permits. Moreover, this requirement had been mentioned already in the 1994 license. Perenco did request Corporinoquia in 2005 for a permit to increase the discharge volume, which was approved in June of 2007. In parallel, Perenco also requested the ministry of environment[302] to provide a global permit for discharges in 2006, which was approved in March of 2007. Nevertheless, the request to the ministry did not include the increased volume, which later became a reason for imposing the fine. Therefore, the company was able to discharge wastewater at will between 2005 and 2010, in the absence of enforcement of the environmental regulations.

Furthermore, Perenco was bounded to conduct monitoring activities as of 2007 and submit an annual report to Corporinoquia and the ministry of environment, which should have included water quality analysis made during the year. However, Perenco failed to comply with the monitoring activities as of 2008[303]. The dossier contains no evidence of the enforcement of regulations between 2007 and 2009. Moreover, the missing information about monitoring was only identified by the ministry of environment in 2010[304]. Concerning Corporinoquia, the dossier does not contain information about the role of this authority in this period[305].

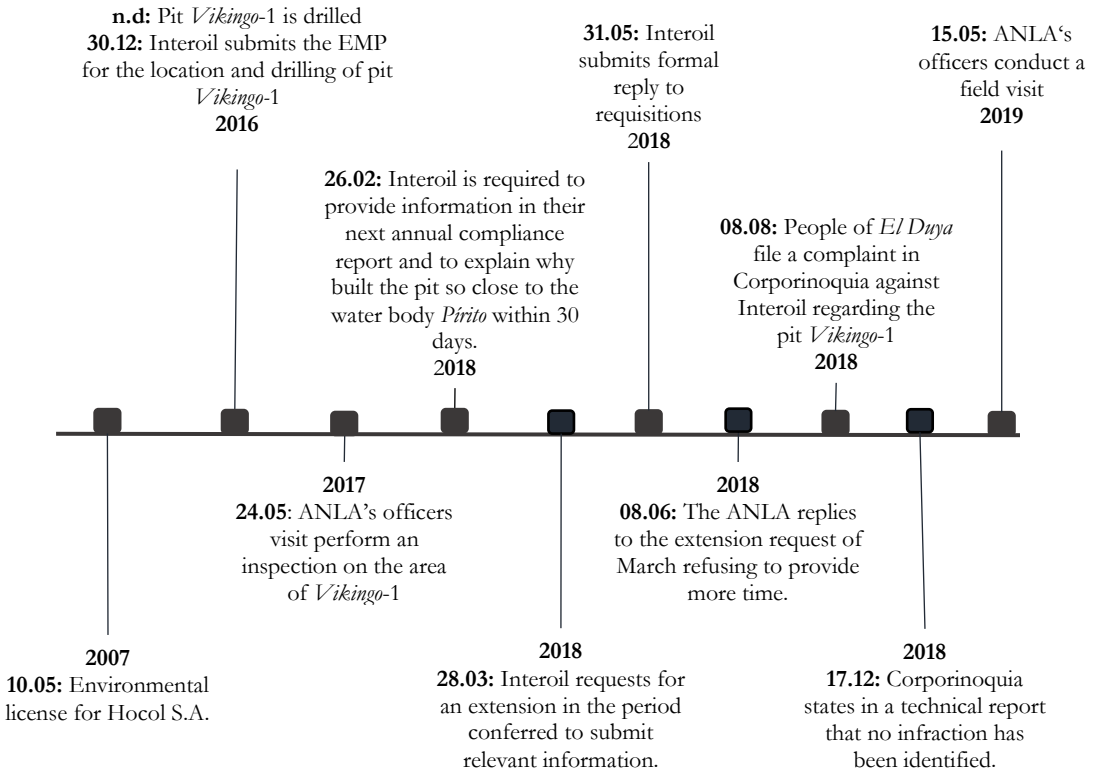
8.3.1.2 Block *Leopardo*

In 2007, an environmental license was approved for the block *Lince-Leopardo*. However, activities were only initiated as of 2016 through the drilling of the pit *Vikingo*-1, for which the company had to submit an environmental management plan (EMP) to the national environmental licensing authority (ANLA). During an inspection visit, ANLA's officers found

[302] The licensing activities conducted by this ministry were passed to the ANLA as of 2011.
[303] According to the report 01864 (2017) made by ANLA. The report mentions 12 samplings in 2007, which would suggest a monthly frequency. However, some samples were supposed to be taken every two weeks. Therefore, the information before 2008 is not considered here.
[304] Through the technical report 808 of May 19th (2010).
[305] Nevertheless, a technical report made by ANLA mentions that Corporinoquia had been informed of the discharge around 2003. According to this information, a complaint filed by the president of a peasant association stated that Corporinoquia led the creation of a commission in 2003 in order to verify the situation about the discharge, which had not been properly addressed by Corporinoquia. See Auto 2888 (2010), page 4.

inconsistencies between the document and what they found in the field. Figure 22 depicts the milestones regarding the project.

Figure 22. Timeline of block *Leopardo*



Source: author's own compilation based on ANLA, 2019.

The main element under scrutiny by the ANLA and the reason for the complaint was the location of the pit, which was installed 25 m away from the central axis of the stream *Caño Pírito*, which constitutes the boundary between the *resguardo* and the pit site. According to Colombian regulations, the fringe of 30 meters measured from the highest mark of the water body should be left for protection; therefore, the ANLA made a requisition to the company Interoil concerning the construction of the pit in an area that was not allowed.

The complaint filed by the people of *El Duya* was sent to Corporinoquia. Five days later, a representative of Corporinoquia went to perform a field visit, which was accompanied by people from the oil company and the indigenous guard of *El Duya*. Four months later, Corporinoquia issued a technical report in which it was stated that *'in the visual tool Google Earth it was verified that there is a stream called El Pírito, which is found at a distance of approximately 100 m*

from the location of pit Vikingo-1" (Corporinoquia 2018, 7). The conclusion of the report states that "*there is no basis to initiate an environmental sanctioning process (…) since no environmental impacts on the area were found*" (p. 8). In contrast to Corporinoquia, the ANLA initiated a process which is still open. According to the latest available information in the dossier, a field visit took place on the 15th and 16th of May of 2019, in which ANLA's officers met with stakeholders. Nevertheless, no mention of meeting with indigenous persons is made in the report[306].

8.3.1.3 Area *Corocora*-C

This area was developed through the production field *Caño Duya*, which is compounded by two pits, *Caño Duya*-1, located inside the *resguardo El Duya,* and *Caño Duya*-2 located near *resguardo*'s boundaries. The first environmental license for this project was issued in 1995 for the transportation of crude oil; the pits; however, required only of environmental management plan (EMP) for their construction. In 2006, officers working for the ministry of environment made the first field visit in which they found that the company had not fully implemented the EMP. From that moment on, the ministry of environment and later the national environmental licensing authority (ANLA), made several requisitions to Perenco regarding the implementation of the plan. In 2010, officers from the ministry conducted a field visit, which led to the conclusion that Perenco had not complied with prior requisitions, therefore, an investigation was initiated. Meanwhile, all permits regarding the use of natural resources had to be requested to Corporinoquia.

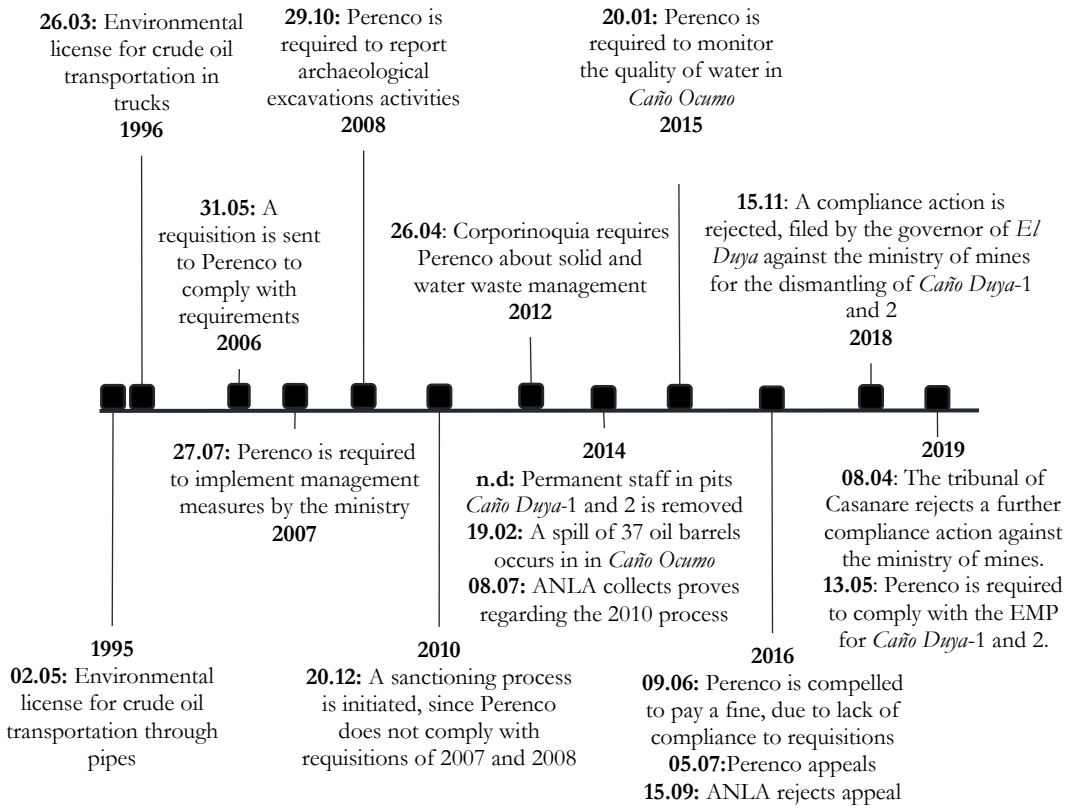
According to a 2006 document of Corporinoquia, Perenco had been using water lacking the proper permit at least since 1999. As well, the company had not obtained the permit to discharge wastewater in the field *Caño Duya.* Therefore, Perenco was required to stop the catchment and disposal of water in the area until the permits were in order. However, no sanctioning was involved. Figure 23 depicts how Corporinoquia and ANLA enforced environmental regulations for this area.

The investigation conducted by the ANLA resulted in the pressing of 10 charges, eight of which successfully proved Perenco's accountability and represented a fine of $356659898 COP. This corresponds to 0,0907 % of the actives of Perenco and 0,1511 % of their operating

[306] See the visit report 2019067306-3-000, issued on the 22nd of May of 2019.

income[307]. In contrast, no information was found regarding investigation and sanctioning processes conducted by Corporinoquia.

Figure 23. Timeline of the project *Corocora*-C



Source: author's own compilation based on ANLA, 2019; Tribunal de Casanare, 2019.

A close look into the performance of Corporinoquia indicates that they realized that groundwater was being used by the oil company only in 1999, when Perenco required an extension of the permit for such use. The response submitted by Corporinoquia denies the extension on the basis that such permit does not exist. Moreover, the response was issued in May of 2004, five years after receiving Perenco's request. On the other hand, the document through which Corporinoquia denies the permit also recognised that the company had been operating in the absence of the proper permits. However, only in November of 2006, two years after informing Perenco that it should stop catching water, Corporinoquia decided to send a requisition to Perenco which established 30 days after the requisition was formalized

[307] For 2016, actives were estimated in $393201644596 COP and operative income in $235892834000 COP.

for Perenco to provide a proper response. Information found in the Dossier indicate that a field visit was conducted on May of 2006, after which the ministry's officers reported that Perenco sent a letter to Corporinoquia on August of 2004 indicating that no permit was required because the flow was lower than the value set by the law. Nevertheless, as the well had no measuring device, the officers of the ministry were unable to stablish whether Perenco was observing the norm or not[308]. Finally, the use of groundwater for *Caño Duya*-1 was allowed by Corporinoquia in 2010[309].

According to the environmental license of 1995, the oil company was bounded to formulate an environmental management plan for the pits[310]. However, only in 2006 the ministry of environment first identified problems with the compliance of the EMP, which ended up in the imposing of the fine in 2016. As shown in Figure 23, once the problem of compliance is detected, the next action of the ministry of environment occurs one year later. Then, the sanctioning process was initiated four years later, even though the requisition made in 2006 stated that Perenco should provide proof of compliance that same year. The subsequent investigation process took five years to finally impose a pecuniary sanction.

8.3.2 Authority over activities related to hydrocarbons

So far, it is possible to argue that in addition to the subnational administrative levels (department, municipal, regional), the national level has introduced a parallel structure in spatial environmental planning through the environmental licensing process for hydrocarbons projects. The licensing process is said to consider territorial plans when approving the zoning for each project; however, the current conditions of Orocué concerning the absence of an updated territorial plan and the large amount of hydrocarbons projects in the municipality, suggest that municipal spatial environmental planning is strongly influenced by the national environmental licensing authority (ANLA). As well, *resguardo*-level planning for both components, structural and dynamic, appears to react to oil exploration and exploration activities.

Some elements can be identified that conduce to a failure in the protection of ecosystems, which are summarized in Table 30. Moreover, they can actively promote degradation. These

[308] See: Auto 1077 of May 31st, 2006. Ministry of environment, housing and territorial development.
[309] Resolution 200-41-10-0764 allowed the use of groundwater for domestic purposes. It was issued the 9th of June of 2010 by Corporinoquia. Quoted in the Resolution 213 (2018) issued by ANLA.
[310] Article 2, resolution 410 (1995). Ministry of environment.

elements suggest that the environmental licenses may not guarantee the actual protection of the environment. The analysis of the case study suggests that environmental impacts concerning the *resguardo El Duya* have occurred in the absence of management measures established in the licenses. To understand this statement, it is necessary to consider that the core of the process of environmental licensing is the implementation of the environmental management plan (EMP), that is, the management of environmental impacts. Therefore, the absence of an EMP or its lack of implementation indicates that the likeliness of occurrence of impacts over ecosystems is higher.

Table 30. Key aspects of environmental licenses enforcement concerning *El Duya*.

	Block *Garcero*-C	Block *Leopardo*	Area *Corocora*-C
Reasons for the initiation of an investigation	a) Lack of implementation of EMP. b) Mismanagement of oil spill.	Installation of the pit *Vikingo*-1 in the protecion margin of the stream *Caño Pírito*.	Lack of implementation of EMP.
Environmental impacts	a) Pollution of river *Caño Duya*, through waste water discharge. Habitat disruption. b) Pollution of soil and river *Caño Duya*.	Disruption of the hydrological regime. Habitat disruption.	Pollution of soil and stream *Caño Ocumo* due to oil spill. Pollution of soil and groundwater through corrosion of abandoned facilities. Habitat disruption.
Affected resources by impacts	a) Water, biodiversity. b) Water, biodiversity, soil.	Water, soil, biodiversity.	Water, soil, biodiversity, air.
Time of response (first report - sanction)	a) Nine years: 2009-2018. b) Ongoing: since 2012	Ongoing: since 2017	Ten years: 2006-2016.
Investigating Authority	ANLA	ANLA	ANLA
Sanction imposed because of proven environmental impact	a) No b) No	No	No
Monetary sanction	a) Yes b) No	No	Yes
Non-monetary sanction	a) No b) Yes	No	No
Restoration activities	a) No b) No	No	No

Compensation to communities	c) No d) No	No	No

Source: author's own compilation based on ANLA, 2019.

The case of *Garcero*-C shows how the discharge of wastewater on the stream *Caño Duya* occurred for several years above the appropriate estimated volume to mitigate environmental impacts. As the volume discharged surpassed the volume for which treatment systems had been designed, it is possible to argue that there were impacts over the aquatic ecosystem during the years in which the discharge occurred, affecting not only water quality, but also biodiversity. Despite the lack of measurement, the researchers have shown how production waters can potentially affect wildlife and human populations because of their reliance on hunting and fishing for subsistence (Yusta-García et al., 2017). In addition to this impact, the dossier contains information about several oil spills between 2010 [311] and 2014, as shown in Table 31, which led to the suspension of the use of the pipeline involved by ANLA in 2015.

Table 31. Oil spills reported for the projects *Garcero*-C and *Corocora*-C.

Year	Date	Barrels		Affected area m²	Location	Block
		Water / crude oil	Crude oil			
2009	18.11	No data	No data	200	*Vereda Miralindo*	*Garcero-C*
2010	7.02	50	0	15	2 km + 150 m from *Sardinas* Station	*Garcero-C*
2010	4.03	No data	No data	300	1 km + 990 m from *Sardinas* Station	*Garcero-C*
2010	13.04	2000	160	15000	2 km + 100 m from *Sardinas* Station	*Garcero-C*
2010	21.03	No data	No data	No data	3 km + 100 m from *Sardinas* Station	*Garcero-C*
2011	30.09	No data	No data	No data	*Vereda La Unión Tujúa*	*Garcero-C*
2011	20.01	1	No data	200	*Vereda Miralindo*	*Garcero-C*
2011	21.01	200	120	600	*Vereda Miralindo*	*Garcero-C*
2011	29.09	0	15	200	*Vereda La Unión Tujúa*	*Garcero-C*

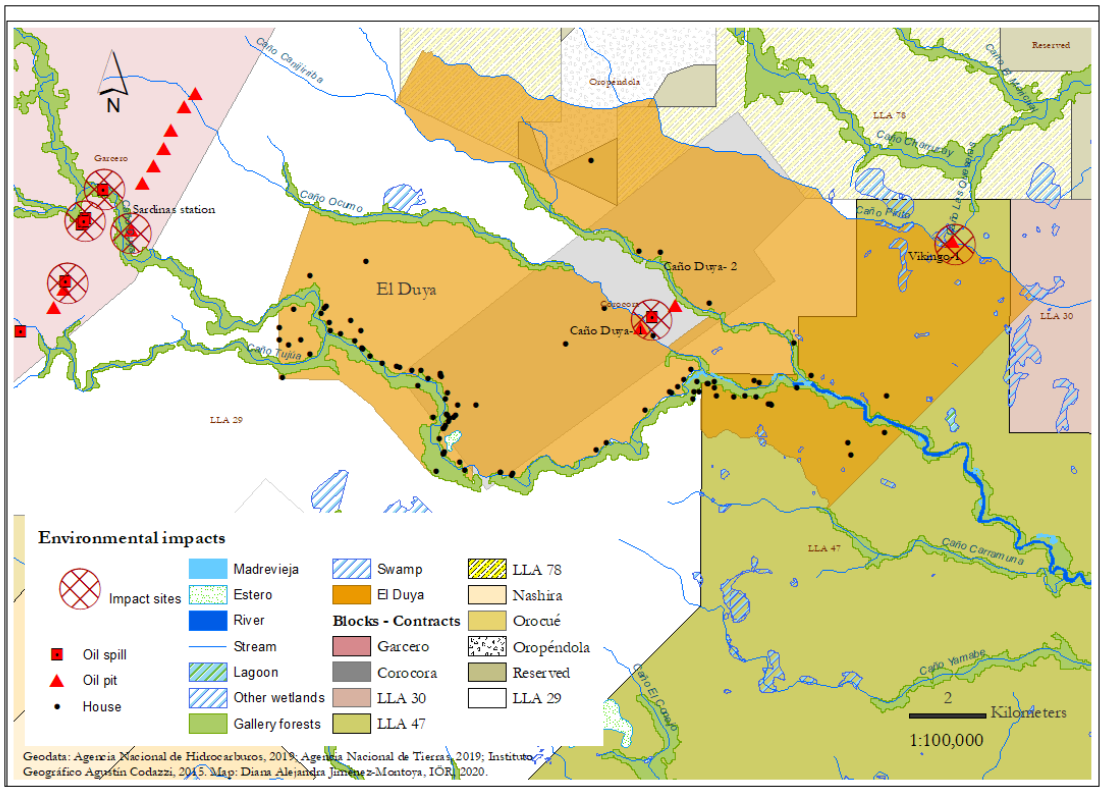
[311] According to a document sent by ANLA to the Attorney General's office in 2015. See: *Radicado* 2015040002-2-000, October 29, 2015.

2014	27.11	0	20	10779	*Vereda La Unión Tujúa*	*Garcero-C*
2014	19.02	37	0	500	*Vereda La Virgen*	*Corocora-C*
2016	09.06	0	10	1000	*Vereda Miralindo*	*Garcero-C*
2016	3.12	1	0	250	*Sardinas* station	*Garcero-C*

Source: author's own compilation based on ANLA, 2019.

The case of *Leopardo* shows several potential environmental impacts caused by the drilling of the pit *Vikingo*-1 in a floodable area, which is crucial for the maintenance of the hydrological dynamics of the stream *Caño Pírito*. Moreover, the report mentions problems with the management of fuel in the area, as well as non-approved constructions that affect also the hydrological regimes of the floodable savannas where they were built. These situations occurred in the absence of environmental management measures, since the EMP was made after the drilling. However, EMP's implementation problems are more evident concerning *Corocora*-C. Map 11 shows the location of the impacts identified for *El Duya*.

Map 11. Oil extraction-related environmental impacts concerning *El Duya*.



Source: author's own compilation. The red circles show the sites where environmental impacts have been identified concerning the projects *Corocora*-C, *Leopardo* and *Garcero*-C.

When the ministry of environment identified failures in the implementation of the EMP in 2006, nothing was done to stop or mitigate the occurrence of the impacts identified in the Plan. Moreover, it allowed the continuation or aggravation of such impacts for years, without any kind of assessment about their extent. Furthermore, the dossier contains no indicators that allow to assess changes in the quality of the natural resources because of the project. Inspections are included in official reports which, nevertheless, lack of metrics and are based on what is observed during the visit, since the technical reports show no evidence of sampling in the field. Therefore, all data regarding natural resources in the dossier for *Corocora*-C has been provided by Kelt S.A. and later by Perenco. However, the quality of the few data available is compromised because of problems with sampling procedures and absence of records.

Accordingly, the extent of impacts that did occur, triggered by the generation of particulate matter, noise and wastewater, have been overlooked. Moreover, the ANLA recognises that Perenco operated the pits of *Caño Duya* in the absence of management measures specifically designed for the exploitation stage (ANLA 2018, 12), which means that even with full compliance of the approved EMP, still there were impacts that had not been identified. Therefore, the evidence shows that the national environmental authority allowed Perenco to carry on with their activities in the absence of an EMP, which suggests that the environmental authority failed to protect the environment during that period of operation without the EMP. Moreover, the officers of the ministry of environment had warned Perenco in 2006 concerning the absence of a proper plan to deal with possible spills. Eight years later, the spill near *Caño Ocumo* occurred in the absence of monitoring of environmental impacts. ANLA responded to Perenco's lack of compliance through the pressing charges against this company in 2016. Nevertheless, the charges related to the absence of an EMP for the exploitation stage were dismissed because of procedural mistakes in their formulation.

Considering that before 2016 there were no kind of sanctions, in addition to the fact that the proportion of money payed by Perenco is so low in relation to their income, it is possible to argue that Perenco was not deterred by from potentially causing grave harm to ecosystems between 1999 and 2016, due to the lack of diligence of environmental authorities. Moreover, since there has been no implementation of the management measures whose absence motivated the fine, it is possible to further argue that environmental authorities have allowed for the continuation of unmanaged environmental impacts.

As a response to the investigation, Perenco has submitted reports for the periods 2016-2017 and 2017-2018; while ANLA officers returned to the area on September of 2018, finding pits

Caño Duya-1 and *Caño Duya*-2 inactive. According to the dossier, Perenco stopped using both pits in 2014 (ANLA, 2018), which means that the infrastructure has been left unattended at least for five years now. The last available report corresponds to the period 2017-2018, which was submitted by Perenco in May of 2019 and was rejected by ANLA because of its low quality[312].

The role of Corporinoquia in this matter is diffuse. The dossier shows that the temporary closure of the pits was informed by Perenco through a letter sent to ANLA on March of 2016; while Salia interviewees indicated that Corporinoquia had not visited the area since 2014. These elements suggest that Perenco has not implemented actions towards prevention, correction or mitigation of the potential environmental impacts associated with the unattended infrastructure of the pits *Caño Duya*-1 and *Caño Duya*-2. As well, it suggests that both environmental authorities, ANLA and Corporinoquia, have failed to enforce the management of environmental impacts related to *Corocora*-C since the closure of the pits until present day.

Furthermore, according to interviewees during fieldwork, an oil spill took place on the 19th of February of 2014, due to the corrosion of a pipeline that goes from *Caño Duya*-2 to *Caño Duya*-1. According to Perenco, 37 barrels of water/crude oil were released 30 m away from the stream *Caño Ocumo*. Three months later, Perenco submitted a report to ANLA in which they explained how they managed the spill and included some results of the monitoring of water quality of *Caño Ocumo*. According to the dossier, the spill was correctly notified, and its management was considered as insufficiently described. The monitoring, however, was considered as providing raw data without interpretation.

Moreover, the inspection report made by ANLA indicates that no observable impact could be identified. As well, it indicates that Corporinoquia took some samples to be further analysed. Nevertheless, none of the administrative acts produced by Corporinoquia afterwards addresses this issue. It should be considered that each barrel is equivalent to 159 litres, therefore, the spill released 5883 litters of water/crude oil, which were reported by Perenco to have covered an area of 500 m^2 and to have been fully recovered[313]. Therefore, the claim for the full recovery, if accurate, does not cover the high probability of impacts related to the toxicity of the substances over soil biodiversity and quality, nor the likeliness of impacting aquatic biodiversity during the dry season.

[312] According to a letter submitted by ANLA on the 6th of June 2019. Number 2019076809-2-000.
[313] See: Auto 215 de 2015. Page 2. ANLA.

Despite the absence of clear statements about the impacts of these projects, it is possible to argue that there are a number of cumulative impacts over ecosystems in *El Duya* and its surroundings, which have not been managed because of failures in the implementation of the EMPs. Considering that the environmental authorities are supposed to keep track of such implementation, five elements were identified which characterise environmental authorities' performance in relation to hydrocarbon's exploitation concerning *El Duya*, which is discussed in the subsequent sections.

8.3.2.1 Weak preventive action

Scholars and state organisations have already identified Problems with current environmental licensing process in Colombia have been identified (Rodríguez 2011; CGR 2017). However, the case of *El Duya* provides insights concerning how environmental impacts were allowed to continue after their first detection by environmental authorities, failing thus to prevent impacts afterwards. This is illustrated by the wastewater discharge in *Garcero*-C; the lack of implementation of management measures in *Corocora*-C and the installation of infrastructure in the protection margin of a water body in *Leopardo*. The fact that the activities producing environmental impacts were not stopped means that future ecosystem degradation was not prevented. On this regard, it is not discussed here whether environmental authorities reacted according to the legal frame, which corresponds to a legal analysis and exceeds the scope of this research. The evidence of *El Duya* shows that among the pool of sanctions of which the environmental authority can choose, none of the preventive ones were implemented[314]. Therefore, as the environmental authority decides how to act in each case, the analysis suggests that environmental authorities opted for not implementing sanctions between 2006 and 2016 conducive to stop and prevent environmental impacts.

On another note, the oil companies are required to manage complaints that neighbours may have regarding their own operation. This is required as part of their environmental management plan (EMP) and must be included in the environmental compliance reports sent to authorities. Therefore, the management of complaints is based on the oil companies' self-regulation, which means that each company can decide when and how to attend a complaint or if doing it at all. As well, it means that oil companies have a great extent of control about what to report to environmental authorities. Under this setting, the only scenario in which

[314] According to law 1333 (2009), art. 36. These sanctions range from written reprimands to preventive seizure of elements used in the infraction, apprehension of wildlife products and the suspension of the activity causing harm.

there is certainty about a complaint being accurately reported is that in which the complaint is equally directed to the company and the environmental authority[315]. Therefore, a company could delay the involvement of environmental authorities by withholding complaints.

8.3.2.2 Absence of knowledge regarding the state of ecosystems

The analysis shows that the environmental licensing process is characterised by its reliance on the information produced by the potential or actual license/permit holder about the state of natural resources. Therefore, the generation of a base line that allows to assess the effects of the project's activities depends on two elements. On the one hand, the quality of the information provided in the Environmental impact assessment or Measures management Plans. On the other hand, the regularity with which the license/permit holder implements monitoring activities and reports the results to environmental authorities. Therefore, in the event of absence of information provided by the users of natural resources, the officers of the national environmental licensing authority (ANLA) or Corporinoquia ignore how resources are potentially affected. The implications of this setting are twofold: first, environmental authorities cannot detect changes on ecosystems that may be conducive to an inspection or the imposing of a preventive measure. Second, if an investigation is initiated and charges are pressed, it is difficult for environmental authorities to prove that ecosystems have been damaged, as the cases of *Garcero*-C and *Corocora*-C exemplify, where the sanctions imposed were based on the lack of compliance of the environmental management plan (EMP), not in the actual damage caused to natural resources.

8.3.2.3 Poor enforcement of environmental regulations

The projects that were analysed are characterised by failures in the implementation of the environmental management plan (EMP), which constitutes the basis for the approval of environmental licenses. The analysis shows that environmental authorities have not compelled license holders to fulfil their duties once they have detected the lack of implementation. This is especially evident in the case of *Corocora*-C, where one unanswered requisition was used to justify the imposing of a sanction four years later. Nevertheless, at no point during those four years was there compliance of the obligations acquired through the license. Furthermore, after

[315] Nevertheless, a complaint sent to the ANLA by the people of *El Duya* was not mentioned in the dossier, which suggests that further elements arise in relation to complaints management.

the pecuniary sanction of 2016, a new requisition was made by the national environmental licensing authority (ANLA) to Perenco, requiring to comply with several of the elements that were used to impose the fine, which suggests that three years later, the compliance of requirements established through the environmental license is still pending[316].

More recently, the drilling of the pit *Vikingo*-1 in the protection margin of a water body contravenes an explicit orientation included in the environmental license. Moreover, it contravenes national regulations regarding natural resources management. Even though national regulations do not forbid interventions in these areas, they do require prior knowledge and approval granted by environmental authorities. However, since the situation was detected through a field visit, nine months passed by before a requisition was made. Throughout that period and until present, the pit remains in the same site and activities continued.

Despite national regulations indicate that environmental authorities are entitled to apply sanctions through preventive, corrective and compensatory measures, the analysis indicates that ANLA and Corporinoquia have not enforced corrective actions regarding the impacts produced by the oil spill that affected *Caño Ocumo* in 2014. In contrast to the reaction to 2014 oil spill of *Garcero*-C; the area of *Caño Duya*-1 and 2 has been left unattended ever since; although the company has indicated that it is a temporary suspension. In 2015, ANLA sent a requisition to Perenco asking for the results of the monitoring of *Caño Ocumo*, which could have been used to evaluate the extent to which it had been affected by the spill of 2014. However, the requisition was overlooked by Perenco and it is only until 2018 that the lack of monitoring of this stream is used to justify one of the charges pressed against Perenco and then the pecuniary sanction[317].

8.3.2.4 Weak monitoring

The correspondence in the dossiers show that inspections have been announced in advance to the license holders, in order to ensure the presence of a representative of the company during the inspection. This procedure allows the license holders to fix and hide problems right before the inspection is made. The case show that inspections have resulted in the identification of irregularities; however, this setting allows the license holder to retain control over what authority representatives observe in the field. Furthermore, since environmental

[316] See Auto 2817 (2019), ANLA.

[317] The document states that Perenco "*only made the first sampling in August of 2010; that is, four years after that commitment came into force*" (ANLA, 2018, p. 18). It means that they should have monitored *Caño Ocumo* since 2006 onwards, regardless of the spill.

authorities do not have the ability to monitor changes in natural resources, monitoring activities have been restricted to the verification of reports provided by license holders. Under this setting, field visits have been used to verify the implementation of observable management measures, mainly in relation to infrastructure. This indicates that field visits have not been designed to detect environmental impacts and therefore, it is unlikely that they result in reporting contraventions.

8.3.2.5 Contradictions between national and regional level

The legal frame for the coordination between national and regional authorities has changed over time. According to the dossiers, there have been joint field visits conducted by the national environmental licensing authority (ANLA) and Corporinoquia and distribution of activities between both authorities in relation to the same matter. Nevertheless, there have been cases of conflicting perspectives over the same issue.

The first case corresponds to the project *Garcero*-C, where the ANLA imposed a fine because of lack of compliance with the volume of wastewater discharged in the stream *Caño Duya*; while Corporinoquia approved such discharge. The second case corresponds to the location of the pit *Vikingo*-1 of project *Leopardo*, which according to ANLA was located 25 m away from the water body constituting thus a contravention; while Corporinoquia affirmed that such pit was located 100 m away and therefore, there was no contravention. The second case corresponds to *Corocora*-C, where Corporinoquia found out that Perenco had been using groundwater without a proper permit. Then, seven years later, ANLA detected that Perenco had been using water without Corporinoquia's permit through a field visit. That same year, Corporinoquia made another visit which led to a requisition about the obtention of the permit. However, while ANLA used this lack of compliance to justify the imposing a fine to Perenco, Corporinoquia granted a permit to Perenco to use groundwater[318].

8.4 Environmental sustainability: multiple understandings

The results presented so far allow to identify different approaches to the question of environmental sustainability according to the actors involved. These approaches were grouped according to the type of actors: state, indigenous and private. In the following paragraphs, the

[318] See: Res. 200-41-10-0764 of 09.06.2010 Corporinoquia.

details of their understandings and the implications for environmental planning for *El Duya* are discussed.

8.4.1 State view: a blurry concept

The foundational legal acts that shape environmental institutions, namely decree 2811 (1974) and law 99 (1993), do not use the concept of environmental sustainability. However, current public policies and institutions concerned with environmental matters do refer to this concept, which, nevertheless, can be subject to multiple interpretations. These interpretations are based on different notions of environmental sustainability and different ways to operationalize it. Thus, it was analysed how this concept is addressed in three of the national level public policies, the national development plans and the planning document created to foster the sustainable development goals (SDG) in Colombia, as well as the most comprehensive legal act available for environmental matters. Key ideas were identified, which are listed in Table 32. In the case of the document for the SDG, known as *Conpes* 3918, the idea of environmental sustainability is exclusively mentioned in terms of the accomplishment of the seventh millennium development goal, through the improvement of indicators such as consumption of ozone-depleting substances; percentage of protected areas; deforestation rates; greenhouse gases emission. Nevertheless, no definition was provided.

The national development plans use the concept with multiple meanings. It is used as an outcome, which can be achieved through several types of actions and actors, as well as a value, such as its use as a principle. Sometimes it is used as equivalent to sustainable development, as well as in the sense it has been defined for this dissertation. Following Crawford and Ostrom (2005), the way in which these documents use the concept of environmental sustainability does not correspond to rules because they lack the component 'or else', that is, there are no clear consequences for the lack of compliance with the statements. In some cases, the concept is used as a shared strategy such as a requirement for public policy formulation or as the qualifier of indicators. As well, it is used as a norm, for example, when considered as a criterion to achieve productive and equitable cities.

In 2018, a guideline for the achievement of SDG was produced by the national planning department, which is supposed to be implemented nationwide. Nevertheless, indigenous interviewees from national level organisations indicated that no consultation about this policy had been made with Indigenous peoples. References made to environmental sustainability in

this document are related to the former millennium development goals, specifically goal seven, in terms of the accomplishment of indicators related to ozone-depleting substances, protected areas, deforestation, greenhouse gases emissions and water supply and sanitation. Thus, when the document refers to the targets established for the SDGs, the coincidence between the narrative of environmental sustainability and the SDGs is found in goal six as access to drinking water, goal 13 as reduction of greenhouse gases emission, goal 14 as hectares of marine protected areas and goal 15 as hectares of protected areas.

Table 32. State approaches to the concept of environmental sustainability.

Document	Environmental sustainability understood as
National development plan 2014-2018	1. Goal achieved through: Territorial planning, protected areas, land/use regulation, social-environmental conflicts prevention 2. Criteria for infrastructure development 3. Goal for human capital qualification 4. Criteria for urban development 5. Continuation in time of natural resources 6. Requirement for public policy formulation 7. Compounded by natural capital and well-being 8. Goal for Land-use planning in Agriculture 9. Principle for tourism development 10. Criteria for refining fuel 11. Principle for social-economic development
National development plan 2018-2022	1. Outcome of the operation of private enterprises and entrepeneurs 2. Criteria fo Land-use planning in agriculture 3. Goal obtained through strengthed environmental institutions 4. Criteria for local government's assessment 5. Criteria to achieve productive and equitable cities 6. Dimension of regional potential 7. Goal achieved through conservation, sustainable use, ecologic conectivity, halting of agricultural frontier expansion 8. Sector of public expenditure
Decree 1076 (2015)	1. Scenario used for the Vision Component of the Regional management plans formulated by environmental authorities 2. Indicators

Source: author's own compilation based on DNP 2015, 2019a.

When asked about environmental sustainability and indigenous territories, State organisations answered differently. According to the answer received from the institute for environmental research (IDEAM), environmental sustainability is a condition of human society in general,

resulting of its interactions with environmental components and between the variables that constitute them, which could be approached through indicators. Corporinoquia, on the other hand, refers to environmental sustainability as a criterion for planning the future of *Orinoquia* region, as a regional goal in itself and as the continuation of environmental components in time. As well, it refers to environmental determinants as a key element to maintain environmental sustainability. This was also the approach of the government of Casanare in relation to the territorial plan for the department. However, only the Sinchi institute refers to environmental sustainability in relation to indigenous territories as the continuation in time of the environmental, social, cultural, ethic, economic and political patrimonies of Indigenous peoples (Acosta Muñoz 2016). In order to gain clarity regarding the way to assess environmental sustainability with respect to indigenous territories, interviewees were asked about how this assessment is made in general and how is it applied to *resguardos*.

8.4.2 Indicators for environmental sustainability

When consulted about the state of ecosystems in indigenous territories, relevant institutions indicated that there was no assessment made for *resguardos* as units of analysis. According to the national environmental licensing authority (ANLA), the information that is available for ethnic communities found in the areas where a licensing process is required '*is found in the base line of each environmental impact assessment study, submitted to ANLA, as part of the procedures to obtain the instrument for environmental management and control*'[319]. Some of these studies do provide information at the *resguardo* level; however, there is no systematization of the information that allows to compare the information provided by studies made for different projects.

The national planning department (DNP) does not produce information at the *resguardo* level; nevertheless, they compile information for municipalities and departments, some of which is provided by the institute for environmental research (IDEAM). The current national development plan includes three indicators of environmental sustainability only in relation to a policy known as development programs with territorial approach (PDET): percentage of hectares under the national protected area database, deforestation rate and percentage of hectares with land-use conflicts.

[319] Response provided to a formal petition under the code '*Radicación*: 2019083708-2-000'. 18.06.2019

According to the IDEAM, there are no environmental studies nor programs, projects or activities[320]developed by this institution in indigenous resguardos. The IDEAM produces environmental indicators which area classified according to natural features such as water, air, ecosystems, land and soil; as well as subjects such as weather, climate change, resources use and dangerous waste. Nevertheless, these are not produced for the *resguardo* level. According to the IDEAM, it is not their competence to evaluate environmental sustainability in *resguardos*; however, it is suggested that information produced about the state of natural resources could be used for such evaluation.

Finally, the Sinchi institute refers to the use of a set of 20 indicators of indigenous human well-being, which cover social, economic, cultural and ecological aspects of indigenous territories. The information for these indicators is managed by Sinchi institute and is organised according to a standardized base line, which is being implemented as of 2016 on a pilot area. The rationale behind these indicators is that there is not enough relevant information regarding Indigenous peoples, which endangers their continuation in time or sustainability. Nevertheless, this information is only available for the Amazon region.

Therefore, the Colombian State approaches environmental sustainability through indicators that reflect the state of ecosystems and some aspects of how they are used. Nevertheless, '*Colombia lacks an integrated system for near real-time monitoring of the state of its ecosystems'* (Sierra et al. 2017, 46). Consequently, the tendency is to use indicators separately, which hinders the possibility of assessing environmental sustainability as a whole. However, the emphasis on biophysical aspects without addressing humans, except for the initiative of Sinchi institute, suggests that State understandings of environmental sustainability are circumscribed to ecological conditions.

8.4.3 The ecological function of property

Despite the lack of standardized assessments of environmental sustainability in Colombia, there is a special procedure known as the 'certification of the ecological function of *resguardos'*, which was established as of 1994 and constitutes a prerequisite for the enlargement or restructuring of a *resguardo* (art. 85). This procedure is based on the constitutional notion of property as a social function for which an ecological function is inherent (art. 58), which was

[320] Response provided to a formal petition under the code '*Radicado* 20195000002841. 11.06.2019'

regulated by the law 160 (1994) and is carried out by the ministry of environment and sustainable development.

The concept or the ecological function of property implies that the right to property '*has restrictions related to the use of natural resources, since this must be made considering the conservation and prudent management of nature*' (Londoño Toro et al. 2004). Nevertheless, while the assessment of such function is voluntary for cases such as the declaration of private protected areas; it is mandatory for *resguardos* whose boundaries require clarification and for enlargement. In 2004, a group of researchers proposed a methodology for the evaluation of the ecological function in *resguardos* through four conceptual lines that aim at discussing interconnections between variables, instead of their mere description. These lines correspond to ecosystems and biodiversity; territory and autonomy; traditional knowledge and uses of the territory and territorial planning and life plans (Londoño Toro et al. 2004).

The law indicates that the assessment must verify that Indigenous peoples comply with the ecological function according to their customs, as a result of a dialogue with indigenous authorities. However, the researchers distance themselves from a static understanding of these customs and consider that Indigenous peoples do not maintain customs unchanged. According to the last report made by the ministry of environment for the congress (MADS 2019), the methodology of 2004 continues to be used. Using the information of the yearly reports of the ministry of environment to the congress, 152 certifications have been produced between 2005 and June of 2019. Nevertheless, there currently is no benchmark of how this certification is related to environmental sustainability, neither in relation to the concept nor in relation to the indicators discussed in the last section.

8.4.4 Indigenous view: '*pervivencia*'

As part of their proposal of environmental spatial planning, Salias state in the territorial mandate that their objective is 'to restore territorial harmony' (Pueblo Salia 2012, 78), which implies a recognition that it has been disrupted. When interviewing Indigenous peoples during fieldwork, it could be noticed that those on the *resguardo* and municipal level would not refer to environmental sustainability unless asked about it and some would even claim to ignore what it meant. In contrast, those on the national level would use it only to point out that this concept has been introduced by the non-indigenous society and that it has always been part of their ancestral worldviews. As it was explained by the interviewees of the national level,

environmental sustainability within indigenous worldviews is about coexisting with nature, about being able to usufruct while protecting or safeguarding. On that ground, Indigenous peoples would be intertwined with nature, their lives would be interwoven with the life of the Earth; therefore, nature protection would be a logical expression of self-preservation.

When asked about environmental sustainability and Indigenous peoples, non-governmental experts explained that whenever Indigenous peoples used this concept and others like sustainable development or conservation, it responded to a strategy that could be called 'indigenous diplomacy', which was implemented in order to interact with non-indigenous actors, especially on the international level. As well, the experts coincided in indicating that indigenous worldviews do consider what is discussed as environmental sustainability. Moreover, the researchers discussing the concept of ecological function indicate that even though it is new for Indigenous peoples; '*it is related to the traditional management of territory, based on the principles of the Ancestral law or law of origin'* (p. 79).

According to the information obtained during fieldwork, several Indigenous peoples in Colombia, including the Salia people, use a concept that is similar to environmental sustainability, the concept of '*pervivencia'*. Even though it was only mentioned by indigenous interviewees at the national level, the Salia territorial mandate does use the concept several times. The meaning of this word in Spanish is to continue living despite time or difficulties. The way Salias use it stresses their continuity as people, which is defined as '*our projection into the future conserving our identity and the setting of internal and external relations under the principles of our worldview'* (Pueblo Salia 2012, 50), where the territory and all of its components is considered as a fundamental tool for the recovery of their culture and as a guarantee of their '*pervivencia',* since they affirm that '*a Salia without territory is not an indigenous person or is an extremely weak one'* (p. 51). The mandate does use the concept of sustainability in relation to management of biodiversity and economic activities; however, it does not use the concept of 'environmental sustainability' as discussed in this research.

9 AUTONOMY OVER ECOSYSTEMS IN *EL DUYA*

'The oil company made us lose the social balance, cultural identity, it weakened everything, the environmental part, everything, the social balance because it started to give money away. There was a plan for the eight resguardos, but people started saying that they would benefit more by negotiating as resguardo, there is where the unbalance is. We lost unity because of resources. By losing unity, we started to lose autonomy, because we were no longer making decisions, instead it was the multinationals'[321]. Salia leader, Orocué.

According to the definition of territorial autonomy proposed by Suksi (2011)[322], the *resguardo El Duya* fulfils the criteria regarding the use of ecosystems and their components. The author indicates that this definition can be used for creating '*a graded scale of sub-state entities, where some entities clearly constitute territorial autonomies, while others may approach, for instance, administrative self-government'* (p. 624). Therefore, when the components of territorial autonomy included in the definition are analysed in detail, it appears that the singular entity, *El Duya*, has exclusive enumerated law-making powers; thus, fulfilling the first criterion. These law-making powers are of special nature, in so far as they only regulate what occurs inside the boundaries of *El Duya* and they have been crafted according to the conditions of *El Duya*. This corresponds to the second criterion. As well, the people of *El Duya* is not represented at any level (municipal, department or national) of the Colombian State, which fulfils a third criterion. However, the criterion about residual powers appears to be problematic in this case.

According to Suksi (2011), residual powers are those that the State retains because they have not been explicitly assigned to the autonomous unit through the mechanism that invests such unit as an autonomous one. In the Colombian case, the recognition of indigenous territories as autonomous units has not been made through a single mechanism where power transference has been outlined. The national constitution of 1991 establishes in its first article that territorial entities have autonomy. Then, it indicates that such an autonomy must be

[321] Fieldwork diary: May 16, 2018.

[322] This definition was quoted in the section 4.4. It is repeated here to facilitate the comprehension of the reader. Territorial autonomy '*involves a singular entity in what otherwise would be a unitary state or a federal state, so that the entity introduces an asymmetrical feature in the state through a transfer of exclusive law-making powers on the basis of provisions, which often are of a special nature and defined in such a manner that the state level remains with the residual powers, while the sub-state level relies on enumerated powers, at the same time as the state level contains no institutional representation of the sub-state entity'* (Suksi 2011, 624).

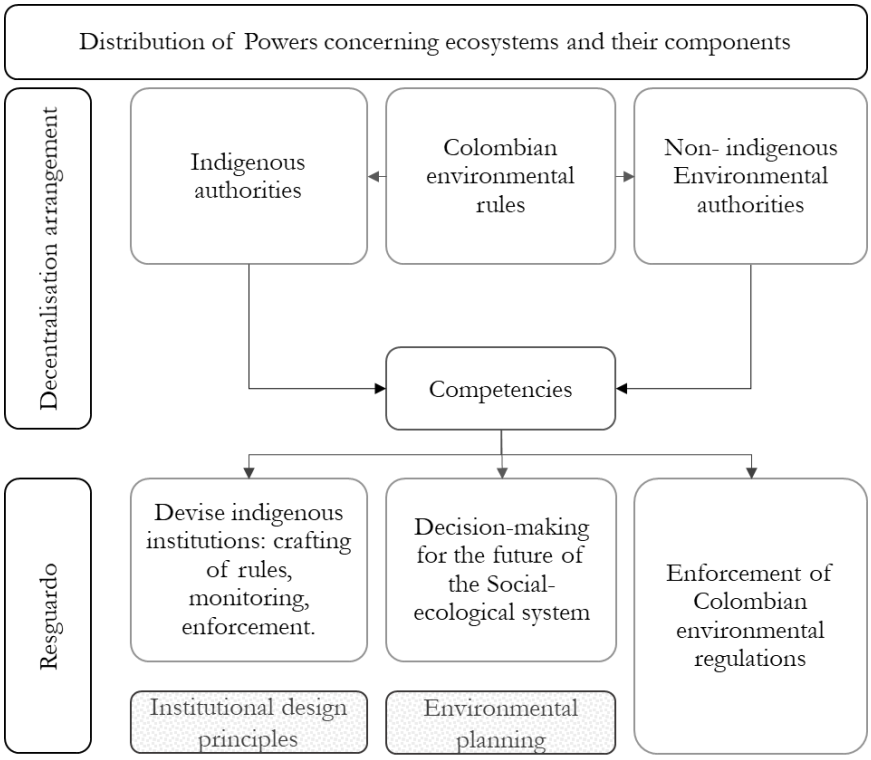
framed within the limits of the constitution and the law. As well, it indicates that the distribution of competencies between the national and subnational levels should be established through an organic law for territorial planning (LOOT). Most of these statements require or have required further elaboration through the enactment of laws and other regulations. Thus, the constitutional court of Colombia has established a principle to guide questions about indigenous autonomy: *'the highest the conservation of customary aspects, the higher the autonomy'* (CCC 2012), as a criterion to discern whenever jurisdictional conflicts arise.

Therefore, there is a general legal frame for indigenous territories which corresponds to the concept of territorial autonomy proposed by Suksi (2011); however, since the power distribution continues to be a subject of interpretation, it is necessary to disentangle how this has occurred in *El Duya* in relation to the question of use of ecosystems and their components. In addition to the question of distribution of powers, Suksi (2011) identifies participation in decision-making as key element of territorial autonomy, in relation to *'the exercise of those competencies with which the sub-state entity has been vested'* (p. 395). Ostrom (1990) discusses institutions in terms of '*who is eligible to make decisions in some arena'* (p. 51) and recently, Goodwin (2019) discusses autonomy as '*the capacity to take decisions'* (p. 509). However, the complete process of decision-making requires the implementation of decisions made, which is related to the exercise of authority: decisions about which rules are necessary, when they should be implemented and decisions about the path that the entity will follow.

The analytical model shown in Figure 24 depicts the relation between these concepts, where the distribution of powers concerning ecosystems and their components corresponds to what the constitutional frame and further legal developments determine with regard to indigenous territories. The power distribution is constituted by the recognition of legitimate authorities for environmental matters, indigenous and non-indigenous, and the bundle of environmental rules that have been crafted for environmental subjects in Colombia. Then, there is an assignation of competences among authorities, which corresponds to the decentralisation of environmental management set by Colombian regulations. At the *resguardo* level, the analysis focuses in three kinds of competencies. The first corresponds to the devising of indigenous institutions, which is directly related to the institutional design principles concerned with the crafting of rules. The second kind corresponds to competencies for decision-making about the future of the *resguardo* as a social-ecological system, which are related to environmental planning. The third kind corresponds to competencies for the enforcement of national

environmental regulations, which organise the relations between indigenous and non-indigenous authorities.

Figure 24. Model for analysing territorial autonomy at the *resguardo* level



Source: author's own compilation. The distribution of powers is made according to the characteristics of the decentralisation arrangement concerning ecosystems and their components. It requires recognising legitimate authorities which can be indigenous and non-indigenous, according to the Colombian legal frame. The competencies at the *resguardo* level refer to the crafting of indigenous institutions (institutional design principles), decision-making regarding the future (environmental planning) and enforcement of environmental regulations.

9.1 Distribution of powers with regard to ecosystems in *El Duya*

The Colombian legal frame does not provide a single enumerating document or mechanism through which the powers of indigenous autonomies are clearly established. Nevertheless, laws have indicated that such powers should be exerted by indigenous authorities that have been created and/or chosen by Indigenous peoples, according to their customs and customary practices. In the absence of regulations, the constitutional court's rulings have filled in some of the voids, indicating that environmental and indigenous authorities should create

coordination mechanisms with regard to environmental matters and natural resources management (CCC 2012), in order to avoid jurisdictional conflicts in the future.

Resources such as biodiversity, water and soil are appropriated at *resguardo* level according to internal prescriptions, which were discussed for the first research question. When asked about their involvement in the management of natural resources in *resguardos*, the staff of Corporinoquia indicated that it would only take place if requested by Indigenous peoples; although the procedure in those cases is not clearly established. On this regard, a Salia man was hired to act as a contact person for Indigenous peoples in addition to his regular duties. According to the information provided by Corporinoquia, they gave a permit for the use of natural resources to the municipality of Orocué which were used for the installation of basic household sanitation infrastructure in 2009[323], although no information about the type of resources is available. Later, Corporinoquia imposed a sanction to the municipality due to the lack of compliance for the use of groundwater (2011). Other information found in the dossiers of the national environmental licensing authority (ANLA)indicate that Corporinoquia approved a permit for Perenco in the field *Caño Duya* for the discharge of wastewater and solid waste management (2008), and for the use of groundwater (2010).

In addition to these permits, seismic acquisition must be considered as of 2010, when Corporinoquia regulated the matter. Prior activities such as those for the blocks *Oropéndola* (2007) and *Llanos* 29 (2009), are likely to have occurred in the absence of permits. In relation to the block *Llanos* 47*,* it was not possible to obtain information about seismic acquisition permits because they were not available for public access*,* even though the meetings for the last stage of prior consultation ended in 2015. Finally, the prior consultation process for seismic acquisition of the block *Llanos* 78 was initiated in 2016 and abandoned in 2018, which would explain the absence of records. According to some interviewees at the *resguardo*, there have been times in which they have had to ask Corporinoquia for permission to cut trees. The regulations established by this authority since 1997, indicate that logging in the *resguardo* for domestic needs is approved by indigenous authorities; while commercial logging must be authorized by Corporinoquia after consultations with the governor[324].

[323] Corporinoquia provided a formal response to a petition about permits and sanctions initiated regarding *El Du*ya for the period 2009-2019. However, the petition was made for the period 1994-2019. Therefore, the information of the VITAL platform was consulted too. Nevertheless, there is no full correspondence between both sources.
[324] Res. 0687 (1997). Art. 44.

Indigenous interviewees indicated that Corporinoquia used to have a more active role in the past, especially in relation to forests. Currently, the presence of Corporinoqia in *El Duya* is made through the coordination of a network of young people interested in environmental topics, under the frame of the environmental education policy promoted by the ministry of environment. One of the nodes of the network in Casanare was constituted by youngsters of the *resguardos El Duya* and *El Consejo* in 2018. Nevertheless, the incidence of the network over natural resources management in the *resguardo* is scant. Therefore, the powers over ecosystems and their components have been exerted by inhabitants in *El Duya*, unless hydrocarbons-related activities are involved. If such is the case, ecosystems and their components have been administered by the ANLA and Corporinoquia, as well as by seismic acquisition companies in those cases in which there were no permits before 2010.

9.2 Authority exercise over ecosystems in *El Duya*

Authority relations between Indigenous peoples and the State have been set through the Colombian legal frame, as well as several constitutional court rulings, which indicate that Salia authorities may exert jurisdiction in *El Duya* with regard to ecosystems and their components. The case shows that in the relations between authorities of *El Duya* and the State, several elements should be considered. On the one hand, there are indigenous authorities of different nested levels, *resguardo* and Salia territory. These levels are not strictly hierarchical and the people of *El Duya* may choose whether to interact with the State directly or through the traditional Salia authorities' association of Orocué (ASAISOC).

On the other hand, there are different types of authorities at the *resguardo* level. The coexistence of authorities based on customs along with authorities created after the demarcation of the *resguardo*, suggests that the notion of a single 'indigenous authority' may not be appropriate for this case. As well, the relation with the State constitutes a further difference between both types of authorities, since the interaction with the State is led by the *cabildo* and sometimes through the assembly. Thus, the interaction between the people of *El Duya* and the State tends to be mediated by the *cabildo* within the boundaries of the *resguardo*. As a citizen, each person in the *resguardo* interacts with the State in the same fashion that any other Colombian citizen; however, Indigenous peoples in Colombia have rights as a collective subject, '*not as mere aggregation of individual subjects that share the same rights or diffuse or collective interests*' (CCC 2012).

Finally, the variations of authorities' jurisdiction according to the type of ecosystem's components, shows that the exercise of authority is not uniform in *El Duya*. Salia authorities have provided permits (*cabildo*), carried out the follow-up (indigenous guard) and have imposed sanctions (council of justice) for most of the appropriation of ecosystem components that has occurred within the boundaries of *El Duya*: wildlife, surface and ground water, timber and non-timber forest products, fish, soil. These permits have been enough for proceeding with the appropriation in most cases, except for the appropriation of timber for non-domestic uses in the case of indigenous persons, as well as in the two cases involving the municipality. These exceptions required the obtention of permits by Corporinoquia. It may be the case that Salia authorities have also provided permits in these cases; however, the municipality could not have proceeded unless Corporinoquia had also given a permit. However, the exceptions reach a maximum in relation to hydrocarbons.

The dossiers reviewed in section 8.3.1 make few references to the people of *El Duya*. Among the 283 items reviewed for the three dossiers, only 26 made reference to the Salia people and among these, 17 corresponded to direct mentions of the *resguardo El Duya*; however, these references are not equivalent to interactions. The dossier for the block *Garcero* contains no reference of the people of *El Duya*, because they are considered to be outside the area of influence of the project. However, the other two show little involvement of the Salia people of *El Duya* throughout the process of evaluation and follow up of the three projects. Details for each project are included in Table 33. Moreover, the three dossiers show that the national environmental licensing authority (ANLA) would send letters to Corporinoquia, the oil company involved and the mayor of Orocué to inform about field inspections.Indigenous authorities; in contrast, were not included.

In the case of *Leopardo*, the references to the people of *El Duya* are explained by the complaint filed by the government of *El Duya* regarding this project, where the indigenous guard gained prominence by joining field inspections. Finally, the dossier for *Corocora*-C contains some references in relation to field visits made to the pit located inside the *resguardo*, in which the indigenous guards appear as actively participating of the inspection. According to these findings, the people of *El Duya* has been involved in environmental protection processes mainly as providers and recipients of information. Nevertheless, the findings also show that they have become more active in the last two years. This change is partially explained by the implementation of road patrolling performed by indigenous guards, and the claims made by the *cabildo* concerning the need to obtain their permission before environmental authorities

can perform field visits within *resguardo*'s boundaries. Moreover, the case of the pit *Vikingo*-1 shows how the people of *El Duya* took the initiative to file a complaint to Corporinoquia, which had not occurred before. This allowed the people of El Duya to acquire the role of contending part and contributed to deepen their involvement in the process.

Table 33. Involvement of people of *El Duya* in the projects *Garcero, Leopardo and Corocora.*

Project	Year	Type of document	Involvement
Garcero	No evidence		
Leopardo	2011	Minutes of prior consultation agreement	Assembly and members of the indigenous government negotiate and sign agreements with the company Interoil after a prior consultation meeting. Document made by the ministry of interior.
	2016	Environmental management plan	The people of *El Duya* provides information for the formulation of the plan. Document made by Interoil.
	2018	Letter of invitation	The governor of *El Duya* was invited by the ministry of interior to take part of a prior consultation.
	2018	ANLA report	A prior consultation meeting is held with assembly, members of the indigenous government and the participation of an ANLA officer.
	2018	ANLA legal act	Salia people took part of a meeting with ANLA's officers, while members of the indigenous guard joined a field inspection.
	2018	Corporinoquia report	Members of the indigenous guard take part of a field visit to the pit *Vikingo*-1.
Corocora	2006	Ministry of environment's legal act	The officers of the ministry of environment performed a field visit during which they interviewed the governor of *El Duya*.
	2018	ANLA report	Officers from ANLA performed a field visit with indigenous guard members, after obtaining permission from the *cabildo*.
	2019	ANLA report	Officers from ANLA asked the *cabildo* for a permit to perform an inspection, which was accompanied by indigenous guard members.

Source: author's own compilation

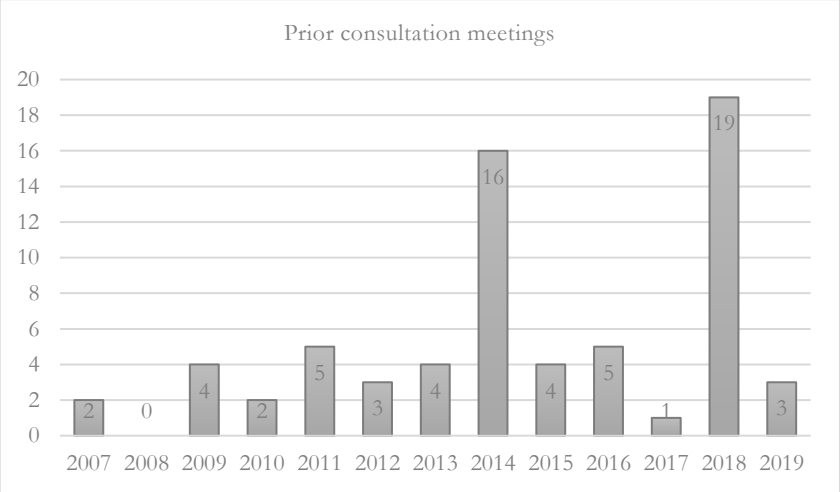
According to Colombia's constitutional arrangement, indigenous territories are inalienable, imprescriptible and non-seisable; which means that Indigenous peoples should exert sovereignty over their territories. However, under the scenario of hydrocarbons exploration or exploitation, Salia authorities in El Duya have not taken part in any of the stages of the

exercise of environmental authority; not only with regard to hydrocarbons but also with regard to other ecosystem components, which have been exclusively managed by Corporinoquia and ANLA.

9.3 Decision-making and agency over ecosystems in *El Duya*

The prior consultation process has been the instance in which the people of *El Duya* has been allowed to discuss the use of ecosystems and their components, mainly in relation to the impacts that external actor's activities could cause in the *resguardo*'s environment. As the consultation involves several stages, some processes have taken years since the 'pre-consultation' stage until the ministry of interior indicates that they have been completed. According to a database published by the ministry of interior, there were meetings related to prior consultation every year in *El Duya* between 2007 and 2019, except for 2008. The years with the most meetings were 2014 and 2018, with 16 and 19 meetings respectively, as shown in Figure 25.

Figure 25. Prior consultation meetings held in *El Duya* between 2007 and 2019



Source: author's own compilation based on Mininterior (2019). The meetings of 2007 corresponded to the blocks *Leopardo* and *Oropéndola*; the meetings between 2009 and 2010 corresponded to the block *Llanos* 29; the meetings in 2011 corresponded to the block *Llanos* 47. In 2012, the meetings corresponded to *Llanos* 29. Finally, between 2013 and 2019 the meetings corresponded to the blocks *Llanos* 29, *Llanos* 47, *Leopardo*, *Llanos* 78, as well to cell tower and a basin management plan.

Information prior to 2007 was not available with regard to the stages of prior consultation; even though the *Corocora*-C contract was subject of consultation in 1994. The length and frequency of the meetings has not been uniform. The data shows that most of the meetings are finished in one day and sometimes, several stages have been completed in one day. Except for the period 2009-2012; the meetings held corresponded to more than one hydrocarbon block, in addition to two processes not related to hydrocarbons extraction.

The prior consultation process has eight stages, one of which corresponds to the analysis of impacts and formulation of management measures, in which environmental authorities sometimes participate. The impacts are identified according to the description of activities presented by the owner of the project and can be related to any dimension, not only environmental matters. For *El Duya*, only one project has had more than one meeting for the analysis of impacts, which corresponds to the block *Llanos* 29. As well, the information found in the dossier points to one time in which staff from the national environmental licensing authority (ANLA) was invited by the ministry of interior to take part in one of such meetings in 2018. According to the report made by the officer of ANLA who attended the meeting, an impact matrix made in a prior meeting was approved and led to declare the stage of identification of impacts and management measures as completed[325].

Besides this type of meetings, further involvement of the people of *El Duya* in the assessment of impacts has been achieved by agreements with the oil companies in order to incorporate people of the *resguardo* as paid staff. These persons are called 'co-researchers' and perform activities related to data collection, mainly in relation to social and economic variables of the population or 'diagnostic', as well as in the identification of wildlife in the *resguardo*, which results in lists of species with their common name in Spanish and their name in Salia language. This process was witnessed during fieldwork and it was possible to see how indigenous staff could also take part of the assessment of impacts. Nevertheless, a final version of the environmental impact assessment was not available, and it could not be determined whether this collective assessment is the same as the one sent to ANLA. Moreover, the documents contained in the three dossiers reviewed, *Leopardo*, *Garcero* and *Corocora*, do not refer to any kind of participatory environmental impact assessment involving the people of *El Duya*, which suggests that, even if there is some kind of participation of the Salia people, this is not a relevant criterion for the licensing process.

[325] According to the ANLA report number 2018115324-3-000 (2018). Dossier LAM3657.

However, the people of *El Duya* have aimed at using other instances. The government of *El Duya* has filed a compliance action against the ministry of mines, the ministry of environment, the national hydrocarbons agency (ANH), Perenco Colombia limited and the Colombian oil company known as Ecopetrol with regard to the proper abandonment of the pit *Caño Duya*-1 located inside the *resguardo,* as well as the full bioremediation of the stream *Ocumo*. Three attempts have been made through a lawyer, in order to obtain a favourable judgement from the administrative tribunal of Casanare[326]. However, the tribunal dismissed the actions every time because of failures in the formulation of the demands, which could not prove that governmental agencies had neglected their obligations[327]. A formal petition was sent to ANH concerning the infrastructure of *Caño Duya*-1, which was redirected to the national oil company, Ecopetrol and then redirected again to Perenco as the owner of the project, who is in charge of the dismantling of the infrastructure found in that field[328]. Nevertheless, Ecopetrol did clarify that the contract signed with Perenco for oil exploitation in *Caño Duya*-1 is supposed to end when no more oil can be extracted. Considering that the field has been suspended and that it has had no formal closure, it appears that the infrastructure will remain in this *resguardo* for indefinite time.

The demand for bioremediation made by the people of *El Duya* is related to the oil spill of 2014 in *Caño Duya*-2. They filed a complaint about this spill through a document sent to Corporinoquia, which contained a description of the spill including pictures. Nevertheless, the field inspection of ANLA and Corporinoquia made after the spill, which had no participation of indigenous authorities, was said to be '*part of the follow-up activities to the contingency'* (ANLA 2015, 2). Therefore, the ANLA report makes no reference to the complaint.

On another note, the Salias of *El Duya* filed a complaint in 2018 regarding the construction of *Vikingo*-1, discussed in section 8.3.1. The inspection resulted in Corporinoquia dismissing the complaint. However, the people of *El Duya* has sought out for support by denouncing the situation of the *resguardo* against oil companies through alternative media[329]. As well, even when

[326] Dossiers 85001-2333-000-201 8-001 52-00 of November 15, 2018; 85001-2333-000-2019-00049-00 of March 22, 2019; 85001-2333-000-2019-00040-00 of April 8, 2019.
[327] According to these judgements, the people of *El Duya* submitted a memorial to ANLA on the 25th of February of 2014, demanding measures and sanctions towards the recovery of natural resources; nevertheless, no reference to this document was found in the ANLA dossier.
[328] The original petition to ANH was made on August 15th, 2019; however, the response was produced in December 24th, 2019 under the reference number *Rad.* 2-2019-063-11803.
[329] See: *La burla de las empresas petroleras a comunidades indígenas*. Newspaper *Trochando sin Fronteras N. 38*. https://trochandosinfronteras.info/la-burla-de-las-empresas-petroleras-a-comunidades-indigenas/

ANLA and Corporinoquia did not act with relation to the environmental impact of the spill of 2014, the people of *El Duya* have been trying to enforce bioremediation actions ever since.

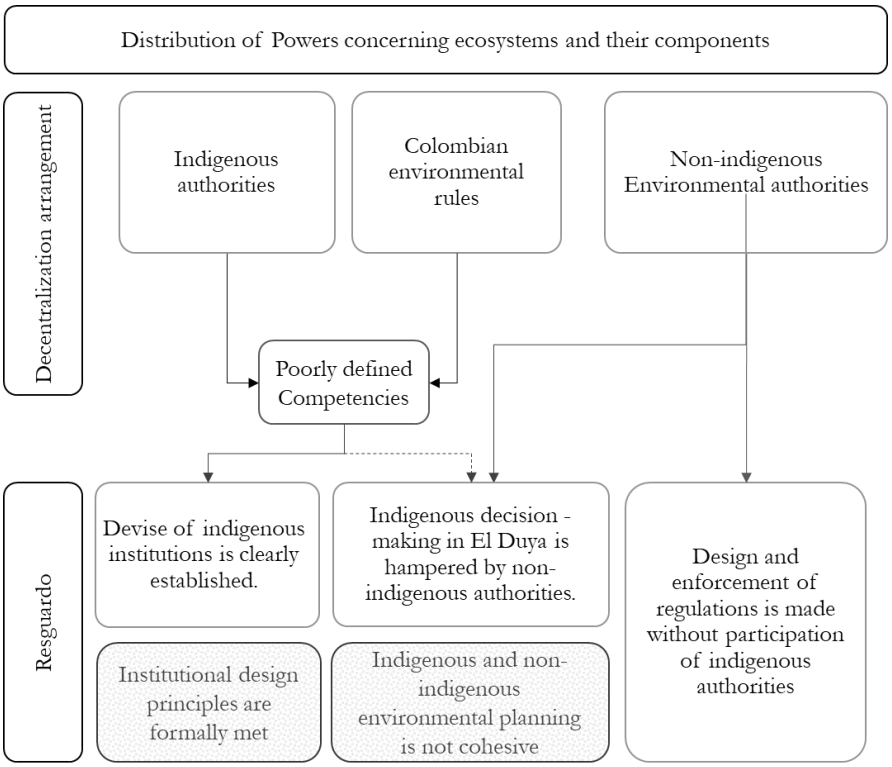
The evidence of this case suggests that non-indigenous institutions have restricted the agency of the Salia people regarding ecosystems and their components in the *resguardo El Duya*. First, because the institutional setting only fosters participation during prior consultation, that is, before the projects have been implemented. Second, because under this setting Indigenous authorities cannot exert control over oil companies' operational activities. Third, because the people of *El Duya* have no means through which they can enforce environmental impact management measures (prevention, mitigation, correction, compensation). Therefore, the formal recognition of indigenous authorities expressed in Colombian laws is not enough for authorities in *El Duya* to exert powers with regard to ecosystems in their jurisdiction when oil companies are involved.

Consequently, indigenous authorities are left with two mechanisms to overcome these institutional restrictions. On the one hand, they attempt to trigger responses form regional and national environmental authorities through complaints or through involving judiciary actors in order to urge environmental authorities to undertake their duties. On the other hand, indigenous authorities call for *resistencias*, in order to exert pressure over oil companies to create negotiation arenas, which depend on the participation of all dwellers of the *resguardo*. Therefore, the agency of the people of *El Duya* becomes contentious with regard to oil extraction-related matters.

9.4 Indigenous territorial autonomy in *El Duya*

Considering the elements included in the analytical model explained in Figure 24; the case of *El Duya* shows that territorial autonomy concerning ecosystems and their components is characterised by a scheme of distribution of powers in which there is a clear recognition of indigenous authorities; in contrast to a poor definition of their competencies. Indigenous peoples select their own authorities and inform non-indigenous actors about who these persons are and what structure they have. As well, they devise their own institutions, fulfilling, thus, institutional design principles at least from the formal perspective. However, the lack of enumerated competences assigned to indigenous authorities, withdraws their powers to make decisions over ecosystems and to implement them, in favour of actors with clearer competences and more political power.

Figure 26. Application of analytical model of territorial autonomy for *El Duya*



Source: author's own compilation. The distribution of powers for *El Duya* results in a poor definition of competences of Salia authorities with regard to the ecosystems and their components. Even though there is a clear set of indigenous institutions in *El Duya*, their leeway to make decisions can be interfered by non-indigenous environmental authorities, fundamentally with regard to oil extraction-related activities. Non-indigenous authorities are entitled to design environmental regulations at *resguardo* level, as well, they are solely responsible for the enforcement of such regulations.

Under this model of territorial autonomy, indigenous authorities are not relevant for the exercise of authority concerning ecosystems and their components, therefore, decisions are implemented without considering indigenous authorities, their institutions and their environmental planning, which consequently affects the social-ecological system. Therefore, by hampering indigenous authorities' participation in the overall process of designing and implementing environmental regulations in *El Duya*, non-indigenous authorities hamper indigenous territorial autonomy. However, the case shows that there is an underlying condition that negatively affects indigenous territorial autonomy, even in a scenario in which indigenous authorities could be actively involved in environmental licensing processes and spatial environmental planning in general: the notion of subsoil resources as a matter that concerns the national government exclusively. This understanding is problematic in two ways.

First, the national constitution expresses that subsoil resources are owned by the Colombian State. This would partially explain why the allocation of hydrocarbon blocks is made by

national level agencies, as well as the environmental licensing process, since it is assumed that the national level corresponds to the Colombian State. However, this understanding overlooks the decentralisation arrangement concerning sub-national entities established by the constitution. Thus, decisions made at sub-national levels may be overridden by the national level, which would affect all types of sub-national entities, as well as *resguardos*. This subject; however, exceeds the scope of this dissertation and is currently debated in Colombia mainly on a legal sphere[330].

Second, the understanding of subsoil resources as being different from resources found on the surface, results from a particular way of understanding nature, which allows its dissection into different kinds of resources according to their location. This kind of '*ontological assumption'* (Howitt and Suchet-Pearson 2006) clashes with indigenous 'relational ontologies' (Escobar 2016), such as that of the Salia people. According to Salia's relational ontology, the Earth or the territory constitutes a whole, in which the distinction between surface and subsoil resources makes no sense. In this line of thought, the territorial autonomy arrangement in Colombia would have intrinsic incoherences with regard to Indigenous peoples for two reasons. On the one hand, it recognises their right to devise their own institutions and give themselves their own authorities, according to their customs and practices. Therefore, it confers value to Indigenous peoples' ways. On the other hand, whenever subsoil resources are involved, the arrangement establishes that non-indigenous ontologies prevail over indigenous ones, regardless of the damages inflicted on Indigenous peoples' ways. Consequently, territorial autonomy for the Salia people of *El Duya* is not a matter of laws and participation only: it interrogates the conceptualisation of the Colombian State itself.

In this line of thought, the certification of the ecological function for *resguardos* constitutes another way in which the Colombian State hampers the participation of indigenous authorities in decision-making. In order to illustrate this argument, *El Duya* can be taken as an example. If the Salias of this *resguardo* manage to enlarge its area or need to clarify its boundaries, they must go through the certification process, which requires them to prove that they continue to follow indigenous' ways and that they are environmentally sustainable[331]. In contrast, any of the neighbours of *El Duya* could purchase adjacent lands and thus enlarge their property, without being requested to comply with such certification. Therefore, the certification of the

[330] See the judgements SU095 (2018) and T-342 (2019) of the constitutional court of Colombia.
[331] Recently, the ministry of environment stated that *resguardos* in Colombia 'have the responsibility of guaranteeing the continuity of natural ecological dynamics, the conservation of biodiversity, forests, water, air, soil; as well as the survival of indigenous communities' (MADS 2019, 55).

ecological function of *resguardos* constitutes an additional burden for indigenous territorial autonomy, in contrast to other Colombian citizens who are not ascribed to an ethnic collectivity. Furthermore, the decision over granting such certification is made ultimately by the ministry of environment, which is entitled to determine if Indigenous peoples are indigenous enough. In the same fashion, the ministry of interior is the ultimate decision-maker concerning the need to conduct prior consultation, based on its prerogative to determine which territories are indigenous or not.

The results for *El Duya* suggest the existence of four barriers for the development of indigenous territorial autonomy concerning ecosystems and their components. The first barrier corresponds to the restriction of indigenous agency to the bounded space of the *resguardo*, rather than the traditional or ancestral territory. This has limited the ability of the people of *El Duya* to develop their traditional livelihoods, as well as their ability to exercise influence over municipal planning. Consequently, they have lost access to formerly controlled areas and have not been able to oppose monocultures cultivation, such as rice and oil palm, in catchment areas that are relevant for the *resguardo*. The second barrier corresponds to the imposition of oil extraction-related activities inside the *resguardo* and in its surroundings. Since they have not been able to make decisions with regard to biophysical transformations in ecosystems, nor the unsolicited presence of foreigners, their right to self-determination continues to be undermined and rapid cultural changes have been triggered.

The third barrier corresponds to the lack of enumerated competencies for Salia environmental authorities regarding oil extraction- related activities. This has excluded Salia authorities from environmental management and planning of their own *resguardo*, mainly in relation to the licensing of such activities. The fourth barrier corresponds to the requirement for the people of El Duya to obtain recognition by the national level, in order to be considered as legitimate actors in their territory. This is evident in relation to the block *Garcero*-C, for which the ministry of interior did not deemed necessary to conduct a prior consultation. Thus, the people of *El Duya* have been kept from knowing about the impacts and risks produced by the operation of the block *Garcero*-C, which has undermined their ability to make informed decisions about their consumption of fish from *Caño Duya* and the potential risks of using its water.

The first two barriers correspond to the resguardo level; however, the four of them respond to structural features of the Colombian territorial autonomy arrangement for Indigenous peoples. However, these have not been developed in the same way. The first barrier is tied to the history of *resguardos'* demarcation, as areas that have been designed for the exclusive

dwelling of Indigenous peoples since colonial times. With the constitution of 1991, *resguardos* became an intermediate stage towards their transformation in indigenous territorial entities, with a clear enumeration of distributed powers. Therefore, the emergence of *resguardo*'s boundaries as a barrier results from the reluctance of multiple sectors of the Colombian State to allow for that transformation after 1991. In 2018, that barrier has begun to crack with the enactment of the Black line decree discussed in section 8.1. However, the refusal to legislate regarding indigenous territories through the organic law of territorial planning; the continuation of the application of the notion of *baldíos* to indigenous traditional territories and the dilatory response of State agencies to indigenous territorial claims continue to hinder indigenous territorial autonomy.

The second barrier is currently inextricably related to the question of prior consultation processes; however, it pre-exists the introduction of this mechanism after the ratification of the International labour organisation (ILO) convention 169 in 1991. The case of *El Duya* shows how oil extraction-related activities in were allowed and fostered by national governments since the decade of 1940 and continue until present day. Before 1991, no formal procedures were required by oil companies to perform their activities in *El Duya*. As of 1994, these activities must be discussed in prior consultation processes; nevertheless, the people of *El Duya* have never had the possibility to halt such activities. Therefore, this barrier appears to have consolidated since the 20th century.

The third barrier is linked to the design of the national environmental system (SINA), in which Indigenous peoples are recognised as authorities for environmental matters in their territories without enumerating competencies as of 1993. However, there has been a continued reluctance to legislate about indigenous authorities at least until 2018, when a presidential decree on indigenous environmental authority was drafted through the permanent negotiation roundtable (MPC) and was not allowed to reach the enactment stage. The case of *El Duya* shows that the regional environmental authority has also shown reluctance in establishing spheres of competence in relation to those matters that the legal frame has assigned to regional authorities, such as the management of forest resources. Even though constitutional court's rulings have exhorted regional authorities to coordinate with indigenous authorities, Corporinoquia has not devised mechanisms for such coordination.

The fourth barrier is related to the function assigned to the ministry of interior to manage the prior consultation processes, once the presence of indigenous actors has been confirmed by this ministry. The barrier of external recognition can be traced back to the end of the decade

of 1960 to what used to be called the 'division of indigenous affairs' (Correa Rubio and Acero Pulgarín 2013), which later acquired the form of a certification and was linked to the prior consultation process. In practice, this certification has been used as the instrument of the Colombian State to define the legitimacy of Indigenous peoples to deliberate about activities in their traditional or ancestral territories.

The evidence of *El Duya* shows indigenous territorial autonomy in Colombia has been established through a non-uniform arrangement, which has several fronts with different development stages. The exercise of indigenous autonomy over ecosystems and their components has some structural features that are common for all *resguardos*, as well as non-structural features that are particular to the situation of *El Duya*. The structural features correspond to the formal recognition of indigenous territorial autonomy, as well as the four identified barriers. Both of these traits result from the arrangement of the State. Non-structural features correspond to those elements of the autonomy model that vary according to the conditions of each *resguardo*, which depend on how governmental actors proceed at sub-national levels and how Indigenous peoples advance their agendas.

In *El Duya*, indigenous territorial autonomy over ecosystems and their components has been exercised on the fronts in which Salias have not been hindered. These fronts correspond to the crafting of institutions, which has occurred with a certain grade of disruption discussed in section 7.3. However, the Salias of *El Duya* have been able to preserve leeway. As well, the environmental planning that is made in the *resguardo* concerning those ecosystems and their components which have not been managed by non-indigenous authorities, nor those which have been appropriated by non-indigenous actors. In parallel, Salias territorial autonomy in *El Duya* has been hampered with regard the fronts concerning the management and planning of those ecosystems and their components affected by oil extraction-related activities, as well as with regard to the front concerning territorial control which has been affected by land grabbing. Finally, Salia's autonomy agenda in *El Duya* has been advanced through the ongoing enhancement of the indigenous guard and through the participation in the Salia association (ASAISOC) as an instance to advance the interests of *El Duya*.

10 DISCUSSION OF RESULTS

The discussion here addresses the findings described in the previous chapters. Considering the extent of the empirical chapters, the discussion avoids repeating the information provided before. The discussion is divided in three main sections according to the specific research questions that guide this dissertation.

10.1 Human-nature relations in *El Duya* and institutional change

The results show how the demarcation and titling of the *resguardo El Duya* played a crucial role in promoting institutional changes. This demarcation occurred in a social and historical context in which the government went from dissolving *resguardos* to protecting them and creating new ones, especially in the Eastern plains and Pacific region (Correa Rubio and Acero Pulgarin 2013), which occurred before the expansion of the neoliberal agenda discussed by Hale (2006, 2011) and the increased multilateral interests on ethnic territories discussed by Offen (2003). It has been affirmed that the *resguardo El Duya* was designed to facilitate oil extraction (Houghton 2008); however, the findings of this research indicate otherwise. According to the interviews made in *El Duya*, the demarcation of the *resguardo* with its particular shape resulted from a strategy of Salia leaders of the time to guarantee the protection of their lands while mitigating the impact of the demarcation over the neighbouring colonizers. Regarding its extension, the Salias of *El Duya* actively pushed for including more land within the boundaries of the *resguardo* than considered by those in charge of the demarcation; but not too much to keep neighbours from reacting with violence.

With these considerations in mind, the demarcation and further titling of *El Duya* seem to constitute a process of territorialisation (Oliveira 1998), in which Salias initiated a social reorganisation process that unfolded after 1978 with the creation of a new social and spatial unit. The case confirms territorialisation as a strategy against encroachment (Kent 2008); however, it further informs about how the Salia people anticipated potential conflicts and decided to postpone the enlargement of the *resguardo* until more suitable times, which indicates that territorialisation may not only re-elaborate relationships to the past, but also to the future of the peoples undergoing the process, which is partially suggested by Oliveira (1998). Moreover, the Salias involved in the demarcation of *El Duya* aimed at securing control over

large land extensions keeping population growth in mind, that is, the survival of the Salia people in the future. Nevertheless, the question of ancestrality seems to have emerged later, as part of the discourses related to territorial rights advocacy (Kent 2008; Escobar 2015).

10.1.1 Law of origin, Mother Earth and indigenous ontologies

The findings concerning Salia's relation with the territory are in line with anthropological works that discuss the distinctiveness of this relationship. Among these, the pioneer work of Reichel-Dolmatoff (1976) indicates, for example, that a Desana person considers herself as interrelated to all things and must, '*fulfil many functions that go far beyond his or her social roles and that are extra- societal extensions of a set of adaptive norms. The rules the individual has to follow refer, above all, to cooperative behaviour aimed at the conservation of ecological balance as the ultimately desirable quality.*' (p. 311). These rules maintaining balance are denominated by Salias as the law of origin, in a similar way to other peoples, such as those of the *Sierra nevada de santa marta* (Zapata Torres 2010; Valderrama González 2016). An important part of the practices of these peoples corresponds to the performance of offerings or payments (*pagamentos*), which consist on retributing nature for what she has provided. This action re-establishes the '*balance altered by human actions*' (Valderrama González 2016, 13); nevertheless, none of the Salia women or men interviewed made any reference to such practices when discussing balance. Only the return of the placenta to Mother Earth is denominated in the territorial mandate as a tribute or *pagamento*; therefore, the Salia people appear to have a particular set of rules, even under the common frame of a law of origin. Therefore, a full understanding of Salia's law of origin remains a gap that requires ethnographic work.

However, the lack of detailed knowledge on that regard is not an obstacle for understanding that Salia's relationship with the territory is fundamentally different from that of the dominant society. This difference is based on their conceptualisation of nature as a living being and their mother, without a definite separation between human beings and nature, which coincides with works discussing cosmologies in South America (Descola 2004). Moreover, the absence of boundaries would further indicate that there would not be separation between Salia culture and nature either, if culture is understood as '*a way to relate with what is external (nature, but also society and the human body) which is reproduced and maintained through practices*' (Echeverri Restrepo 2001, 17). On that ground, it would not be appropriate to approach Salia's relationship with nature based on the dichotomy nature/culture discussed as 'naturalism' (Descola 2004),

'Eurocentric ontology' (Howitt and Suchet-Pearson 2006), or 'universal world of individuals and markets' (Escobar 2016).

Therefore, the notion of relational ontologies (Escobar 2016) gains full relevance for discussing the relationship of Salias of *El Duya* with nature. Through this notion, it is easier to explain that Mother Earth can be equated to the notion of territory, under the frame of a relational world where '*the defence of territory, life, and the commons are one at the same'* (p. 20). Within this frame, coexisting institutional arrangements, such as that based on customs and the one developed after the bounding of *El Duya*, become an expression of the spectrum of possibilities of this ontology; rather than an anomaly of institutional design.

10.1.2 Salia institutions and change

The institutional arrangements identified for *El Duya* show different structures, authorities, decision and rule-making processes, and monitoring processes, which are part of the customary arrangement and the one created after the titling of *El Duya*, both of which constitute the governance system of the *resguardo* at the same time.

10.1.2.1 Customary institutions

Salia customary institutions are characterised by a vertical structure in the production and enforcement of rules, as well as an authoritarian style represented by the elders, captains and '*ritual specialists'* (Echeverri Restrepo 2001, 17). Under this arrangement, there is no governmental structure. Decision-making is unquestionably assigned to male elders in their own family group, and ultimately to *Saikwas* when their involvement is required. Authority is exercised over lower levels of the hierarchy without minimal opposition. Legitimacy of authorities is inextricably related to knowledge and unquestioned, which is similar to what McLain et al. (2018) have reported for customary institutions where practices where '*deeply rooted in the cultures'* (p. 218). Appropriators have conformed to what is considered by the collectivity as '*proper behaviour'* (Ostrom 1990, 89) and is guaranteed by working rules.

However, Salia customary institutions show two particularities. On the one hand, rule-making is made by authorities for the operational and collective levels, while the constitutional level, constituted by the law of origin, is conceptualised as being off-limits for transformation and requires specific translation made by the *Saikwa*. On the other hand, monitoring is not made

by appropriators, which responds to a conceptualisation of the world as a '*dense network of interrelations'* (Escobar 2016, 18), where the transgression of rules disrupts the network itself. According to Ostrom (1990), '*shared norms that reduce the cost of monitoring and sanctioning activities can be viewed as social capital to be utilized in solving CPR problems'* (p. 36). Nevertheless, the relational setting of customary rules in Salia institutions seems to go beyond the resolution of problems related to ecosystems and their components: whenever transgressors are negatively affected as a consequence of their actions, the well-being of the collectivity results affected as well because the balance of life is altered. Therefore, monitoring appears to be intrinsically embedded in the functioning of the customary institutional setting.

10.1.2.2 New arrangement

Institutions crafted after the bounding of the *resguardo*, appear to conform more closely to the institutional design principles. Decision-making is made not only by individuals invested with authority, but also by regular people as long as they take part of the general assembly. The change from family chiefs towards individuals taking part of deliberation arenas has created another expression of collective action, through the allocation of individual benefits on a rotational basis. This is exemplified by the negotiation observed in the prior consultation meeting during fieldwork. This negotiation resulted in a few individual job positions; however, the people of *El Duya* have rotational system in place which guarantees that other individuals can become eligible in forthcoming negotiations. These decisions are made by the assembly, either through voting or unanimity, which contributes to the transparency of the system. Moreover, Salias avoid imposing decisions through majorities and resort to the use of deliberation and advice or '*consejo'* (Echeverri Restrepo 2001, 12); which resembles what Ghate (2000) has reported for decision-making in *Lekha mendha,* where *'a simple majority is not enough'* (p. 13). On a similar note, Ostrom et al. (1999) discuss global commons and argue that voluntary agreements should shift towards '*unanimous agreement as a collective-choice rule'* (p. 282). Thus, the case study provides evidence of how unanimous decision-making constitutes a desirable trait of common pool resources institutions.

Another distinctive feature of the new arrangement is the emergence of governmental structures, which do not have a hierarchical organisation. Moreover, there are organisational structures in the system which have clearly defined competences; however, individuals can take part of more than one of these structures at once. The way in which Salia organisational structures are units embedded in the general assembly appears to respond to Salia relational

ontology, in which humans are individuals and also part of the Earth at the same time. Accordingly, organisational structures can share components between them (members) and are part of the general assembly at the same time.

Salia authorities' legitimacy is provided by the election in the assembly, in which knowledge continues to play a crucial role; however, skills to interact with non-indigenous actors are preferred over other types of knowledge. McLain et al. (2018) discuss legitimacy in terms of perceptions about who has *'the authority to make decisions about how the resource is managed'* (p. 215). In the case study, the legitimacy of authorities is questioned with regard to how fit they are perceived to be by regular *resguardo*'s dwellers. McLain et al. (2018) propose analysing legal legitimacy, social acceptability and ecological credibility as '*types of legitimacy'* (p. 233); however, people in the *resguardo* actively takes part in the crafting of operational, collective choice and constitutional rules, as well as in the election of *resguardo*'s authorities, which would cover the first two types proposed. Furthermore, the ecological credibility occurs when appropriators' knowledge over ecosystems leads them to '*believe that the decision would result in the outcomes predicted by proponents of the decision'* (p. 233); in *El Duya*; however, there is no clear cut separation between decision makers and the recipients of the decision, which further adds to the unfit of using these categories, at least for institutions in *El Duya*.

This mismatch might be caused because the proposal of McLain et al. (2018) mixes internal and external aspects in the conceptualisation of legitimacy, which lead to equate legal aspects to external recognition. Moreover, researchers seem to use the concept of legitimacy to qualify not only authorities but also rules (Ostrom 1990, 2005; Larson et al. 2015; McLain et al. 2018). Accordingly, it may be useful to review those types considering that legitimacy can be internal and external (Larson et al. 2015), as well, the need to clarify whether legitimacy refers to authorities or rules or both gains relevance. In this research, the discussion focused on internal legitimacy only because the case is framed in a territorial autonomy arrangement, which requires of formal (legal) external recognition by definition.

10.1.2.3 Authority and authorities in *El Duya*

Institutions after titling of the *resguardo* have made possible for women to become authorities and to exercise authority at some extent. However, this shift in the participation of women occurs in the presence of patriarchal structures which have resulted from the confluence of indigenous and non-indigenous forms of women oppression. This phenomenon has been

called '*the junction of Patriarchies'*[332] (Paredes 2014), which brings into life a '*super-hierarchical order'* (Segato 2014) that poses further obstacles for indigenous women, including the difficulty for maintaining authority positions[333]. According to Fay (2008), it is necessary to distinguish between authorities understood as a person or an organisation, and authority understood as an action. In this regard, that women can become authorities does not guarantee that they can exercise authority under a social order that does not allow women's exercise of power.

Consequently, it is necessary to distinguish the exercise of authority made by the authorities of the new arrangement versus the authority of elders, which is characteristic of the customary arrangement[334]. The new arrangement provides a common frame for the exercise of authority regardless of age and gender, which is based on the collective-choice and constitutional rules in place and covers all realms in which customary authority does not exert domain. Elders' exercise of authority is based on their qualities as aged males and operates over realms of traditional domain instead of the whole *resguardo*. This is exemplified by the fact that while most of *resguardo*'s lands are subject of allocation by the general assembly, some 'pockets' of land persist under the domain of elders, as it used to be before the titling of the *resguardo*. Fay (2008) discusses a similar situation for a case in South Africa, which he explains that this ambivalence is possible '*because of locally shared authoritative knowledge of histories of occupation, allocation, cultivation, genealogical ties, etc. and a general agreement about the legitimacy of family control over land*' (p. 7). The case of *El Duya* shows, as discussed by Fay (2008), that the authorities of the new arrangement do not lose relevance when customary authorities continue to be holders of authority. However, the customary exercise of authority is progressively diminished as elders pass away.

The question of rule-making in *El Duya* under the arrangement created after the titling of the *resguardo* constitutes an important shift in relation to the customary arrangement. Rule-making results from deliberation in collective arenas in which every individual is allowed to take part; even though the participation of children and elderly people are more limited than that of adults and young people. Moreover, rule-making for the constitutional level is now available for regular people. Under this frame, the people of *El Duya* have devised rules for appropriation in *El Duya* which do not restrict quantities, neither for ecosystem components

---

[332] '*Entronque de Patriarcados'* as originally proposed in Spanish.

[333] Moreover, Salia women have also been subjected to the changes in the victimization pattern described with regard to the presence of hydrocarbons in Brasil (Segato 2014), which constitute further obstacles for their exercise of authority and their day-to-day lives.

[334] See the analysis of Chirif (2010) for the amazon region of Peru in '*Autoridades Tradicionales'*: http://www.territorioindigenaygobernanza.com/images/stories/pdf/recorte2_autoridadestradicionales.pdf

nor for areas. According to Ostrom (2005), the assignation of *'a specific quantity of a resource unit requires that those making the assignment know the total available units'* (p. 233), which would explain that in resource systems such as fisheries, for example, such assignation was unlikely. This situation conforms to the absence of knowledge about ecosystem component's quantities in *El Duya*.

However, further elements might explain the absence of fixed appropriation rules in *El Duya*. On the one hand, there is no precedent on their history of such type of rules which might render them '*incomprehensible'* (Cayón Durán and Turbay Ceballos 2005, 112), because they have not experienced a radical obstacle in their access to ecosystem components that justifies such restriction. On the other hand, there is currently no absolute frame for discerning what constitutes appropriate behaviour regarding nature, as there used to be when customary institutions were dominant. Therefore, authorities do not have the power to set restrictions and could be questioned if they attempted to. As well, the frequent rotation of authorities in the *cabildo* increases the chances for more people to occupy an authoritative position and to be questioned because of trying to implement restrictions, which would result in deterioration of social relationships. This could also explain that preferred types of payoff rules (Ostrom, 2005) correspond to the loss of appropriation rights; while incarceration and the imposition of fines are not considered. The concerns for social disruption may explain that Salias of *El Duya* prefer payoff rules based in mutual observation and lead to conflict resolution rather than ruptures in their society. Moreover, this type of rules is rooted in their customs. The halting of appropriation could occur under customary institutions, for example, when a site was kept off from accessing, which could be temporary or permanent.

Monitoring of the use of ecosystem components and behaviour is devised and implemented by appropriators in *El Duya*, with a special unit for its implementation, the indigenous guard. According to Ostrom (2005), '*individual appropriators tend to monitor each other's behaviour rather intensively'* (p. 233); however, this monitoring is not equivalent to denounce and subsequent sanctioning. Since Salias prefer to avoid conflict, the information produced by appropriator's monitoring tends to be brought into the general assembly without a direct accusation. Under this frame, the indigenous guard gains relevance as the organisation with recognised authority to exert monitoring. However, monitoring roles may be rewarding because when a rule-infractor is spotted, the monitor *'gains status and prestige for being a good protector of the commons. The infractor loses status and prestige. Private benefits are allocated to those who monitor'* (Ostrom 1990,

96). Thus, the tension that could be created by the individual guard monitoring over an individual appropriator would be attenuated by reassurance provided by the collectivity.

The situation found in *El Duya* shows that a process of institutional change was initiated by the Salia people after the titling of the *resguardo*; nevertheless, the reasons behind this change are not clear. The creation of the guard in 1998, for example, constitutes an institutional change that had no direct precedent in the customary arrangement and aimed at creating another authority position with the main purpose of being accountable for monitoring. Considering that indigenous guards exist in other Indigenous peoples' institutional arrangements, it is likely that the emergence of the guard among the Salia people is related to their interaction with other peoples, especially the Nasa people who created their current indigenous guard in the decade of 1970 (Sandoval Forero 2009). The resulting scheme is one in which there is mutual monitoring because the members of the guard are supposed to monitor their own conformance to prescriptions at *resguardo* level, which corresponds to what has been reported in the literature (Ostrom 1990). However, the complaints expressed by interviewees in *El Duya* about the operation of the indigenous guard and the lack of sanctioning, indicate that further adjustments are required. However, the exact causes for the creation of the indigenous guard and its subsequent transformations, as well as the reasons behind the change into the current organisational structures and institutions could not be determined in this research[335].

10.1.2.4 Tensions in institutional change

The process of institutional change in *El Duya* has been characterised by the weakening of customary institutions and by new adapting institutions, which has left voids in the way that the social-ecological system is regulated. Customary institutions are connected to a larger group of *'norms that refer to every aspect of communal life'* (Segato 2014, 605); therefore, their weakening has resulted in a retraction of their sphere of influence, which is now limited to those people who observe customary rules and accept the exercise of authority under this setting. Novel institutions have not yet compensated such retraction, which has left some flanks unattended, despite the institutional changes introduced. This mismatch can be observed with regard to the regulation of sacred sites found in areas of ecological importance. For example, some ponds are considered as the 'houses' of *güíos* and *babillas*, who are considered under customary institutions as the owners of such houses and decide who can

[335] In future research, it would be necessary to ponder the potential role of the NGO CECOIN, active in Orocué during the decade of 1990.

access the place and how much can be extracted. Both species play a role in ecological dynamics that sustain fisheries. Fishes constitute a main source of protein for the Salias of *El Duya* and are found in those places during some seasons of the year. However, institutions created after the titling of the *resguardo* have not yet created prescriptions that regulate appropriation in these places, which could partially explain why youngsters who have no knowledge about the ecological or customary importance of the site are usually quicker to disturb these sites and to hunt these animals than other *resguardo* dwellers.

Furthermore, the ongoing dynamic between both types of institutions may help to explain why most of the prescriptions made under the institutional arrangement created after the titling of the *resguardo* correspond more to norms than rules with regard to ecosystems and their components. Following Crawford and Ostrom (2005), the key distinguishing factor is given by the assignation of a consequence for not following the prescription, which is present in rules and absent in norms. For example, the Salias of *El Duya* prescribe that dwellers must never catch too much fish. However, it is not clear what would occur if there is a transgression. In contrast, the rules for obtaining financial benefits are clearly established, therefore, if a dweller fails to take part in communal activities, the person will not be eligible for obtaining future benefits. The example of fishing norms is directly connected to the question of monitoring and sanctioning problems. The prescription does not conform to the notion of 'regulative rule' (Crawford and Ostrom 2005, 140) because Salia institutions have not yet adjusted enforcement and sanctioning that allow for that construction.

Finally, the results show that there have been external drivers fostering institutional change in *El Duya*, where the titling of the *resguardo* appears to have played a crucial role. It triggered changes not only in Salia institutions, but also in their social and cultural life; which is consistent to what other researchers have found (Finley-Brook and Offen 2009; Larson 2010; Gebara 2018). Once the *resguardo* was created, the most important driver for change in institutions in *El Duya* has been triggered by oil extraction related activities, which unfolded changes in social and biophysical aspects of the system. This is consistent with what the literature has reported regarding impacts over Indigenous peoples caused by extractive activities (Boiral et al. 2020), concerning environmental impacts over the ecosystems on which Indigenous peoples depend (Yusta-García et al. 2017), social and cultural impacts over indigenous societies (Orta-Martínez and Finer 2010) and the triggering of changes in their patterns of biodiversity use (Suárez et al. 2009).

10.1.3 Interpreting institutional design principles

The results show that both types of Salia institutions conform to most design principles, although to a different extent. Using the criteria proposed by Cox et al. (2010), the information contained in Table 24 would provide evidence of the presence of the eight design principles in *El Duya*. Taking the approach proposed by Quinn et al. (2007), the design principles would be qualified as strong, weak or absent. Nevertheless, the authors provide no benchmarks to guide the assessment of each design principle. The approach of Morrow and Whatts (1996) focuses on indicating whether the principles are met, which is similar to the assessment of presence vs absence. However, the authors do not provide assessment elements that can be used for the discussion.

Following the protocol proposed by Ratajczyk et al. (2018), all desing principles can be found in *El Duya* except for principle 4a, which is discussed by these authors as present when '*monitors are present and actively audit CPR conditions and appropriator/user behaviour (…) "Audit" is defined as measuring or assessing a condition or behaviour in some way'* (p. 70). Therefore, its presence in *El Duya* would depend on what accounts for measuring and assessing. For example, appropriator's in *El Duya* have perceived the progressive reduction of biodiversity, which has been discussed on collective arenas. This could qualify as a type of collective assessment. Hence, further scholarly debate is required to reach a consensus.

10.1.3.1 Design principles in *El Duya*

The results of *El Duya* contribute to the identification of core variables that appear to be necessary for discussing each design principle. Concerning design principle 1a, the legitimacy of users may be assessed gradually, in order to capture differences in the status of the user. An increased rigor for acquiring and holding rights may provide further motivation for users to self-commit, which would have further consequences on the institutional arrangement, since '*once appropriators have made contingent self-commitments, they are then motivated to monitor other people's behaviours'* (Ostrom 1990, 100).

For principle 1b, the boundaries are established through titles, physical traits, such as rivers, as well as administrative boundaries. However, the evidence of this case points to the legal land title as the most important factor in the bounding of ecosystems. Cox et al. (2010) formulate principle 1b as boundaries *'that define a resource system and separate it from the larger biophysical environment'*. However, floodable savanna ecosystems, in which the flooding season

makes basin's boundaries blurry, even in the presence of fences, suggests that it is crucial to make explicit that ecosystems' boundaries depend more on the delimitation needs of researchers and less on natural features. Ratajczyk et al. (2016) acknowledge theoretical discussions about the appropriateness of design principle 1b because of its spatial condition, which may not fit ecosystems and communities. However, their coding proposal is made in terms of natural and constructed features for limiting entry in addition to institutional arrangements, as well as the combination of these conditions. In all cases, the criterion to consider principle 1b as present would be that the boundary is successfully limiting entry to the common pool resource.

The evidence of *El Duya* suggests that the spatial boundary is fundamentally represented by the collective land title, which has kept *resguardo* ecosystems from encroachment in the long term, in a context in which the *resguardo* is not isolated. Current land-grabbing problems are not yet solved but are being addressed by the people of the *resguardo*. Moreover, the title has fostered collective action concerning the defence of the boundaries of the *resguardo*. The history of the creation of the reserve that led to the titling of the *resguardo* suggests that in the absence of the title, fences installed by Salias and institutions crafted for the regulation of the territory, would not have been enough to effectively limit the entry of non-indigenous actors; in contrast Morrow and Whatts (1996) highlight that in addition to titles, tenure security is further needed in this principle and conclude about their case that '*land titling was a necessary but not sufficient condition for meeting this expanded principle'* (p. 1644). On this regard, it is necessary to consider that design principles '*should not be viewed in isolation'* (Baggio et al. 2016, p. 435); therefore, the land title as a way to establish boundaries is certainly not enough and requires of further elements to foster absolute deterrence.

Following Cox et al. (2010), researchers have discussed principle 2a in terms of adequacy of the rules to characteristics of the resource (Morrow and Whatts 1996), as well as '*local conditions as involving the predominant culture, ideology, customs, and livelihood strategies of a community'* (p. 7). However, the results of *El Duya* show that the congruence of rules with social and environmental conditions is framed in the '*long and close association, therefore, knowledge of the specific environment and what it can sustain'* (Matunga 2013, 22). Salias knowledge about their ecosystems and the ways in which *resguardo*'s dwellers appropriate ecosystem components, lead to the crafting of rules that make sense for the conditions of the *resguardo*. This finding coincides with a brief suggestion made by Quinn et al. (2007) regarding the role of '*Maasai culture knowledge'* (p. 107) in this principle, and with Baggio et al. (2016) who affirm that *'congruence between local*

conditions and rules seems to highlight the importance of ecological knowledge of the environment in which a CPR is embedded' (p. 431).

Principle 2b in *El Duya* appears to be related to the social and cultural traits of Salias. The rules are devised in order to guarantee that households can secure their sustenance, according to their capacities, and that benefits are distributed in an equitable fashion, which includes especial measures for people in need. Coinciding with the literature, those who work more are the ones who benefit more of the system (Ostrom 1990), mainly in relation to agricultural activities. Moreover, the case coincides with scholars highlighting *'the importance of users perceiving the match between appropriation and provision rules as fair, relating this condition to a principle of equity'* (Cox et al. 2010, 9). Morrow and Whatts (1996) consider that this principle should not only be discussed with regard to the resource, since they should be congruent also with '*market conditions, and with the cultural norms and social and economic patterns of interaction of the appropriators. The pace and scale of the institution are congruent with traditional decision-making processes'* (p. 1674).

The third principle is considered by Cox et al. (2010) as fundamental for literature concerned with '*the importance of local knowledge in natural resource management in which local users have first-hand and low-cost access to information about their situation and thus a comparative advantage in devising effective rules and strategies for that location, particularly when local conditions change'* (p. 9). However, Ostrom's formulation as '*Most individuals affected by the operational rules can participate in modifying the operational rules'* (Ostrom 1990, 93), seems to be more concerned with the ability of appropriators to deliberate and interact with each other for the making of rules (Morrow and Whatts 1996; Quinn et al. 2007), as well as their ability to timely react to changing conditions. Thus, the findings of *El Duya* show that this principle has two variables for the analysis, which correspond to individual and household participation in collective arenas in which they can take active part of the rule-making process, not only for the operational level but also for the collective and constitutional levels.

Principle 4a is expressed in *El Duya* through the role of appropriators acting as monitors and through the role of indigenous guards invested with the authority and responsibility to act as formal monitors. These findings correspond to what Ostrom (1990) reported about monitoring '*not by external authorities but by the participants themselves'* (p. 94). According to Cox et al. (2010), '*Monitors may not perform satisfactorily if they do not directly benefit from improved resource conditions. Thus, it may be important that monitors are accountable to those who most depend on the resource'* (p. 10). However, accountability in *El Duya* appears to be based on social features related to

reputation and maintenance of balance, rather than on '*exposing slackards to the risk of losing their positions'* (p. 96), especially in the case of guards, who are not paid for their labour.

Principle 4b in *El Duya* corresponds to the findings of Morrow and Whatts (1996) for the Yanesha people in Peru, where *'despite a threat from colonists and loggers, there were no formal mechanisms of forest monitoring. (…) The Yanesha probably monitored timber harvesting (…) through their everyday use of the forest and through awareness of who was selling timber and to whom'* (p. 1649). Monitoring of ecosystems in *El Duya* is based on day-to-day experiences and perceptions. Morrow and Whatts (1996) consider that this can be explained by the lack of experience with new conditions as well as the presence of external actors. For *El Duya*, it appears that the lack of precedent in Salias' customary ways may have had an effect, since the need to quantify ecosystem components was not present before. Moreover, the absence of extractive activities as legitimate livelihoods in *El Duya*, offers little incentive to increase the costs of monitoring by adding concrete measurements to the duties of guards, since '*the way in which rules are enforced is forgiving of occasional lapses or errors and allows appropriators to avoid the high costs that can result from rigid application of uniform rules'* (Ostrom 1990, 186).

However, the analysis of Morrow and Whatts (1996) points to a key issue for *El Duya*, namely, the effect of external factors. The ongoing changes introduced in the Salia territory are producing environmental impacts that were not present before, especially those related to oil extraction, for which Salia institutions had no reference frame. Monitoring ecosystems under these circumstances requires of further arrangements (Orta-Martínez and Finer 2010), which are currently not available for the Salias of *El Duya*. Nevertheless, Salias have been using a tool that is also available for all Salia *resguardos*, the annual census, through which legitimate users are registered. The census is used to monitor the social system with regard to population growth and other socioeconomic variables, which suggests that there is a shift towards more systematic approaches that could later be used for ecosystems.

Principle five corresponds to sanctions that can be graduated according to the seriousness of each case. Following Cox et al. (2010), some scholars argue that '*sanctions are not needed in the presence of strong social capital and should not be implemented as a replacement for it'* (p. 10). In contrast, it has been discussed that *'graduated sanctions are, together with the congruence DPs, the most important determinant of successful CPRs'* (Baggio et al. 2016, 432). The effects of graduated sanctions vary according to the common pool resources (CPR) and the type of resource (Quinn et al. 2007). Ostrom (1990) refers to sanctions as one feature that could be present in CPR arrangements, not as a determinant. Moreover, she affirms that '*some redundancy is built into the monitoring and*

sanctioning system. Failure to deter rule-breaking by one mechanism does not trigger a cascading process of rule infractions, because other mechanisms are in place' (p. 96), which partially coincides with assessments about the importance of social relations in collective action.

Graduated sanctions in *El Duya* are described through two variables*:* the design of prescriptions and their enforcement. In most cases, the sanctions in place correspond to norms rather than rules, where the consequence of the transgressions are not well established, therefore, there is no clear frame for enforcement. On this regard, Quinn et al. (2007) consider that management based on traditional norms is less likely to produce clear graduated sanctions. It is likely that Salias will make further adjustments regarding enforcement. of sanctions because it is being perceived by dwellers as a problem of the *resguardo*'s institutional arrangement. The situation of *El Duya*; even though principles 4a, 4b and 5 appear to exhibit redundancy. Moreover, enforcement appears to be a shared concern for members of the indigenous association (ASAISOC), which may constitute a feedback for *El Duya*'s dynamics about the modification of rules.

For principle 6, the evidence suggests that it is present in *El Duya* and that it has graduated characteristics in relation to the involvement of actors. This finding is similar to what Ghate (2000) reports about *Lekha Mendha*, where the mechanism for solving conflicts is based on day-to-day gatherings and '*formal meetings are called only if required'* (p. 11). Cox et al. (2010) indicate that instance for conflict resolution are required to maintain collective action because '*conflict over an exhaustible resource is inevitable'* (p. 11). The evidence of *El Duya* shows that conflicts tend to be related to the allocation of forest plots, which sustain most of the provision of biodiversity and agricultural activities. Currently, these plots do not constitute the exclusive source of sustenance for every household, which contributes in relieving the pressure when potential conflicts arise. As well, the practice of finding a partner in other *resguardos* and newlyweds sometimes moving out to the *resguardos* where the partner lives, has helped to diminish pressure over the system. It is likely that this has been developed as an adaptation to the changes introduced by bounding of Salia territory; however, the conditions that led to these practices were not investigated in this dissertation.

Morrow and Whatts (1996) discuss how external factors can complicate conflict-resolution within the system. This seems to be the case in *El Duya* with regard to the changes introduced by colonisation and oil extraction-related activities; which have created conflicts about social and economic factors that are still a matter of discussion; however, appropriation involving external actors has not been reported as a source of conflict in the case of trespassers, for

example. In that case, the transgression is clear and there is no conflict to discuss. The current problem of land-grabbing and the impacts of oil companies' activities have been taken to judiciary instances, while the *resistencias* create a temporary '*space for the control and practice of indigenous economic and political authority in the face of the cultural and economic dislocation forced upon them'* (Temper 2019, 103). Therefore, it appears to be useful for the analysis of design principle 6 that in addition to identifying graduation in conflict-resolution mechanisms, the questions of external actors and factors can be incorporated. Considering the instances described for *El Duya*, it would be useful to distinguish between internal mechanisms for *resguardo* dwellers; judiciary mechanisms which involve the people of *El Duya*, a contentious party and the judiciary actors; and circumstantial mechanisms which involve the people of *El Duya* and external actors.

Principle seven was proposed by Ostrom (1990) in terms of appropriators being able to devise rules whose legitimacy is not undermined by external governmental officials. This condition is later discussed as '*autonomy to craft their own institutions'* (p. 184). Since then, this principle has been discussed in terms of *'the authority of the appropriators to devise the institution themselves'* (Morrow and Whatts 1996); '*formal autonomy'* (Ghate 2000); '*local autonomy in making rules'* (Chhatre and Agrawal 2009); recognition of '*the autonomy of lower-level jurisdictions (States, regions, communities), and their right to make decisions regarding this commons'* (SESMAD 2014). However, not all scholars discuss these principles in terms of autonomy (Quinn et al. 2007; Ratajczyk et al. 2016).

The evidence of *El Duya* was analysed considering the Colombian territorial autonomy arrangement, which fosters a formal recognition of indigenous governments, authorities and institutions. At the same time, the case shows how such recognition was not valid in relation to oil extraction related activities. Considering that the results of the third research question of this dissertation show that the concept of autonomy has several dimensions, and authors use it without providing a clear definition, it seems that the analysis of principle seven would benefit from a more careful choosing of terms. Moreover, it would be advisable to remove the notion of autonomy to qualify the ability to design rules. Ratajczyk et al. (2016), for example, propose to use several questions as a guide for the analysis regarding the types of rights to manage CPR, therefore, principle seven would be present when '*appropriators who have de jure/ de facto rights to manage CPR and are exercising those rights'* (Ratajczyk et al. 2018).

Furthermore, the conditions of the case support the proposal of Morrow and Whatts (1996) of expanding the seventh design principle, so it considers '*external agents or organizations'* (p. 1650) in addition to governmental authorities. The conditions of *El Duya* show that external

environmental authorities and oil companies play a role in how rules are crafted in the *resguardo*, where the former restrict jurisdiction while the latter introduce unexpected challenges. Therefore, principle seven in *El Duya* appears to be related less to the recognition of the legitimacy of the rule system, and more to the imposition of a more powerful one.

Principle eight is found in *El Duya* as expected for complex CPRs (Ostrom 1990, 101). As well, it shows nestedness both inside and outside the *resguardo*, which coincides with the observation of Cox et al. (2010) regarding nesting as including '*both horizontal and vertical linkages because they may accomplish similar functions'* (p. 12). Quinn et al. (2007) identify that '*outside intervention could create a break down in nested enterprises'* (p. 110), which appears to be supported by the case of *El Duya*, where the intervention of oil extraction companies has been fostering ruptures at the family and *resguardo* level in the Salia territory. Nevertheless, the case has also shown that Salias have been able to reorganise according to changing needs.

10.1.3.2 Groups of design principles

According to Anderies et al. (2004), the design principles may be analysed through clusters, where the first one contains the principles 1a, 1b, 2a, 2b and 3 and contribute to solve '*problems associated with freeriding and subtractability of use'* (p. 12), while the second one contains principles 4a, 4b, 5 and 6 and act as '*feedback control for resource use'* (p. 12*)*. The results of *El Duya* suggest that these groups could be modified, considering principles 1a and 1b as one cluster which would correspond to the definition of institutional jurisdiction. This would correspond to the boundaries of the *resguardo*'s*,* as well as the identification of legitimate users (registered vs non-registered individuals in the census). Then, a second group would be made up by principles 2a, 2b and 3. The third group would be compounded by principles 4a, 4b, 5 and six. Then, principles seven and eight would cover the relation between the system and external factors. This group would correspond to a further step in which the institutions crafted through the first six principles are recognised as legitimate by external actors, governmental and non-governmental and would contribute to ensuring that the system is considered as compounded by subsystems and embedded in larger systems.

10.1.3.3 Robustness and success

According to Ostrom (1990), the stability of institutions and the conformance to the design principles suggest that those institutions '*are robust and will survive for a long time to come'* (p. 136).

However, the results of *El Duya* suggest that customary institutions will not last for much longer, considering that their sphere of influence has been shrinking and that they have undergone several transformations concerning rules and their enforcement. Considering the coexistence with the institutions crafted after the titling of the *resguardo* and the influence that customary institutions seem to exert over current norms, it could be expected that further institutional changes move toward the merging of both types of institutions. Nevertheless, some aspects of the newest arrangement can be expected to predominate over the inputs originating in the customary institutions, considering that the scope of the latter has been shrinking.

Robust systems are those '*that have been able to adapt and learn'* (Ostrom 2005, 257) in the face of social, economic and ecological disturbances. The results of *El Duya* suggest that it is a robust social-ecological system. According to Anderies et al. (2004), a social-ecological system is robust if the ecosystems upon which the social system relies are kept from reaching a state in which they no longer provide support for human life. They further argue that '*rather than searching for mechanisms to prevent the collapse of a resource base, the social system maintains itself and looks for another resource to exploit.'* (p. 7). This argument is based on an understanding of systems in which there is a separation between the social and the ecological system. As well, it is formulated considering a setting in which humans depend on a particular resource, therefore the possibility to switch the resource base. Moreover, some authors have affirmed that the social and the ecological are different domains which '*operate by their own logic. Each system logic can be understood in relative isolation and the interactions between the two domains can be identified, studied, and manipulated'* (Anderies et al. 2016), which would justify the proposal of more appropriate concepts.

However, this kind of reasoning overlooks the works on biocultural diversity (Smith and Wishnie 2000; Pretty et al. 2009) which have shown how that such separation or isolation between social and ecological systems is less clear than the authors propose. Moreover, such an approach is based on the assumption that systems' boundaries are fixed and that they pre-exist the bounding made for their analysis. As well, a separation between social and ecological systems is only possible under the frame of an ontology in which it is fostered.

Against the arguments about the exploitation of resources, the results show how the *resguardo* has gone through the decrease in the populations of several species and the likely collapse of

one (*Tapirus terrestris*[336]), which has led Salias to look for strategies to prevent future collapses, such as reforestation, nurseries for *Cuniculus paca*, aquaculture and domestic animals farming, whose effectiveness, although, has not been assessed.

It is unlikely that the people of *El Duya* engage in a '*sequential destruction of natural resources'* (p. 7) because of three reasons. The first, corresponds to the close interaction that most people have with ecosystems, which allows them to detect persistent changes such as the decrease in populations, called by Ostrom (2005) as reliance on disaggregated knowledge (p. 281). This '*accumulated knowledge system'* (Matunga 2013, 6) (design principle 2a), is openly shared among peers and can easily be discussed by the general assembly (design principle six). This appears to be the case of *Odocoileus virginianus,* whose populations decreased and later were perceived to recover. The second corresponds to the question of being Salias and identifying themselves as such. Being Salia is equivalent to being able to live close to nature and to enjoy the benefits from nature. This does not mean that Salias must only dwell in the *resguardo*, in fact, Salias develop multiple activities in the urban area of Orocué or even live there. However, losing the possibility to interact with nature would mean that they could not recreate the relationships and practices that make them Salia people. They would have to give up '*the inextricable link that exists between the community and, via the medium of ancestral land, their ancestors*' (Matunga 2013, 18), therefore, they would lose their Salia identity. In this line of thought, an irreversible deterioration of the ecological system would endanger the social system itself, which means that the incentives to modify perverse patterns and introduce institutional changes are a question of survival. The third reason is how Salias have acted in the past. Their history shows that they have moved out from their traditional territory only when they have been forced to do so and that, once they have found themselves in a new location, they have recreated their connection to nature. Therefore, the creation of the *resguardo* as a guarantee against further forcible displacement, provides the Salias with a strong motivation to maintain the integrity of the system, as it shields them from uncertainty. The *resguardo* not only provides a reliable shelter, but also a source of sustenance which is not available elsewhere.

The results show that the robustness of the system is also affected by external factors (Anderies et al. 2004; Ostrom 2009; Barnett and Anderies 2014); however, the theory has been criticised because '*external factors that are not stressed in the design principles'* (Cox et al. 2010, 12). Some authors

[336] When asked about *Tapirus terrestris*, a species considered '*a major indicator of ecological health of landscapes'* (Moreira et al. 2018), interviewees said that it was no longer found in the *resguardo.* However, large predators such as *Puma concolor* and *Panthera onca* are reported as active in the area and may constitute indicators of ecosystem health (Zeilhofer et al. 2014).

have already discussed the need to stop analysing '*institutional arrangements as causal factors in isolation'* (Anderies et al. 2016, 500); nevertheless, this theory has been structured in such a way that the analysis is concentrated on the institutional arrangement and a common frame has been developed. The criteria for analysing contextual factors are not equally advanced, for example, the SESMAD contains 172 variables entries, among which the ones that are considered external correspond to ecological connectivity, monitoring, sanctions, support, user group support and recognition, where only the latter appears to be connected to the isntitutional design principles theory. The use of the social-ecological systems framework (SESF) contributes to the mapping of those external factors, as well, it contributes to the identification of variables that constitute an input for the design principles, which; nevertheless, requires further discernment about the extent to which both analytical structures are coupled.

The concept or robustness; however, is not the only criterion used by scholars to evaluate social-ecological systems. Success is also used when '*the resource was utilized sustainably, and there was an absence of conflict among resource users'* (Ratajczyk et al. 2016, 451); when there has been a '*succesful long-term environmental management'* (Cox et al. 2010, 3), which implies the absence of a '*clear failure in collective action and management'* (p. 3). Quinn et al. (2007) discuss success with regard to management, acknowledging that the assessment depends on the actor's perspective: '*ecologically successful outcomes may not always equate with socially successful ones so that the resource may be maintained in a state that supports livelihoods but is undesirable for conservation or protection objectives'* (p. 111). McLain et al. (2018) discuss success not a as general concept but with regard to the co-management of fisheries, as fostered by attributes such as *'leadership, social cohesion; catch share quotas, and protected areas'* (p. 224).

Ostrom (1990) defines successful institutions as those '*that enable individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present'* (p. 15). It is probably made clearer when she indicates that the design principles help '*to account for the success of these institutions in sustaining the CPRs and gaining the compliance of generation after generation of appropriators to the rules in use*' (p. 90). Using this perspective, that Salia institutions have maintained the functionality of the system up to this point suggests that the institutions of the *resguardo El Duya* can be considered successful. More recently, Baggio et al. (2016) affirm that '*the success of a case depends on the type of CPR, and a combination of social "infrastructure" that is suitable to the ecological conditions'* (p. 431). However, they propose that principles 2a and 2b are '*the linchpin for success, independent from the type of system'* (p. 431).

The concept of success appears to refer to the ecosystem base, which has been sustained through several generations to make appropriation possible through long periods. Robustness, on the other hand, appears to refer to institutions that make such sustaining possible through the crafting of rules and their adaptation when they face disturbances such as those derived from oil extraction-related activities and from Salia livelihoods if applied to *El Duya*. Following Cox et al. (2010), the role of the design principles is to '*explain under what conditions trust and reciprocity can be built and maintained to sustain collective action in the face of social dilemmas posed by CPRs. This collective action, in turn, helps prevent the deterioration of a managed CPR'* (p. 2). When the theory was presented, the author expected that it would be possible in the future '*to identify a set of necessary design principles'* (Ostrom 1990, 91); which remains unsolved despite further contributions (Schlager 2016, 408).

According to the results obtained in this dissertation, the use of the design principles and the concepts of robustness and success are based on the assumption that the way in which institutions have worked from the past until the present, which has maintained ecosystems in a good level, will predict how institutions and ecosystems will be in the future. All of the design principles identify key elements for institutions to be able to create rules and change them if necessary, in a swift and not costly way. However, the case of *El Duya* shows how the presence of all design principles may not be enough to guarantee that the system follows an expected path in the future, mainly because the principles provide little input about the context of the system. Even on a scenario of complete conformance to the principles, they do not inform about the state of the larger biophysical environment, the social and economic situation that affects the system and the political frame in which the system is embedded, considering that most of the world is organised through State-nations. In this line of reasoning, the predictive power of the theory depends on further assuming that the condition of ecosystems will remain the same or at least with little change. Thus, scenarios of externally-induced change such as those resulting from dynamics of frontier regions, extreme weather events, fires or fracking, are beyond the scope of the theory. Moreover, scenarios of war and social instability are also outside of the focus of the theory on relatively stable systems. The case of *El Duya* shows, as well, that the relationships of the system with external actors regarding political subjects are not part of the scope of the theory.

The institutional design principles appear to be useful for understanding current institutional arrangements, where each design principle could be considered as a realm of analysis, compounded by several variables that could be present or not depending on the characteristics

of the common pool resource or the social-ecological system. Predictions would require a clear acknowledgement of underlying assumptions. Moreover, additional effort is required for compensating the lack of attention to contextual factors, which could be tackled as it has been done in this dissertation through the use of the social-ecological systems framework. Finally, the limitations of the design principles for considering alternative scenarios, suggest that it should be used in combination with other approaches (Cox et al. 2010).

10.2 Environmental planning: a question of institutional jurisdiction

The findings about the processes of territorialisation in *El Duya* suggest that the exercise of planning has been present for decades among the Salia people, even before the titling of the *resguardo*, which coincides with the arguments of scholars of indigenous planning (Jojola 2008; Matunga 2013). As well, the case of *El Duya* shows that the prescriptions contained in the mandate are designed for the operational, collective-choice and constitutional levels; however, spatial planning is addressed only for the latter, for the Salia traditional territory.

10.2.1 Indigenous planning, order and territory

The planning of Salia territory is expressed through the documents of the life plan and the territorial mandate. In the Spanish-speaking world, the spatial dimension of the notion of planning is usually addressed through the concept of '*ordenamiento territorial*', which literally translates 'territorial ordering'. These plans address more than '*just spatial planning*' (Matunga 2013, 5) and include a wide range of aspects of Salia life, such as culture, political agenda, territory and nature. This approach coincides with the trends identified for other Indigenous peoples in Colombia (Echeverri Restrepo 2000; Zapata Torres 2010) and is linked to the characteristics of indigenous planning in general (Matunga 2013; Prusak et al. 2016). However, unlike cases in which Indigenous peoples consider that their territory is already 'ordered' (Cayón Duran and Turbay Ceballos 2005; Zapata Torres 2010); the planning of Salia territory is based on the recognition that the territory is unbalanced and that it requires of order, fostered by a planning instrument such as the territorial mandate. It is likely that the focus on the notion of order is related to translation of indigenous concepts into Spanish; however,

Matunga (2013) also uses the notion of order to discuss the situation of Indigenous peoples prior to colonisation based on the Māori approach to planning.

10.2.2 Salia way of planning

Salias argue that the territorial mandate is made as part of their exercise of autonomy in order to provide order to the territory. In contrast to authors who argue that Indigenous peoples' involvement in planning practices constitutes a form of colonisation (Cayón Durán 2010). As well, Salias' planning differs from cases in which Indigenous peoples' engagement in planning responds mainly to the availability of governmental funding (Jojola 2008; Prusak et al. 2016), instead, their planning processes appear to correspond to what Matunga (2013) calls '*dual planning heritage'* (p. 13), which refers to that planning which is based on Indigenous peoples and State perspectives, which would explain that the Salia people had decided to produce a document expected to be used as a planning instrument.

However, the Salia people of Orocué argues that planning is not circumscribed to the areas contained in *resguardo*'s boundaries. Planning beyond administrative boundaries has been discussed for other cases, which is related to the recovery of control over ancestral or traditional territories (Fals Borda 2000; Ulloa Cubillos 2010, Matunga 2013). The proposal of the Salia people is made with the aim of unifying the *resguardos* and appears to be characterised by a gradual strategy towards the increase of territorial control. This is planned through the definition of areas of strategic ecological and cultural value, their engulfment by *resguardo*'s enlargements and a continuous expansion throughout the Eastern plains. Furthermore, the results of *El Duya* show that Salia planning responds to the location of their territory in a frontier region, where the dynamics of *baldíos*, extractive industries and large agribusinesses constitute an effective constrain to their territorial aspirations, which would explain the emphasis that the territorial mandate makes on identifying territorial threats.

Other analysis about *resguardos* in *Orinoquia* region highlight the ability of Indigenous peoples to have '*discursive shifts'* (Berman Arévalo and Ros-Tonen 2009) according to the opportunities that come along. However, the case of *El Duya* does not present such marked strategic employ of discourses. Moreover, Salia's proposal appears to follow a thread based on their customs, where the goal is not to acquire ownership over more lands. Hibbard et al. (2008) discuss how Indigenous peoples have mobilised to obtain recognition for usufructuary rights '*to enjoy the "fruits of the land," in other words to hunt, fish, gather, and so on, on lands in which others have proprietary*

rights' (p. 142). However, the proposal of the Salia people seems to go beyond, through the removal of limits that *resguardos* and private properties have created. Salias approach could be explained under the frame proposed by authors who have discussed how Indigenous peoples prefer to use the term territory rather than lands in order to *'merge the importance of control over land and resources with questions of racism and dispossession'* (Bryan 2012, 216) and how they conceptualise the term as one that renders secondary or inaccurate the understanding of limits as discrete entities (Echeverri Restrepo 2000; Zapata Torres 2010), which would coincide with what has been described about the dynamics of the Eastern plains region before the 20th century (Mansutti Rodríguez 2010; Gómez López et al. 2012).

The declaration of strategic areas for cultural and ecological protection and conservation constitutes would require that Salias can exert influence at the national level to invest such areas with legal status. In contrast to the findings reported by Cayón Durán and Turbay Ceballos (2005), where indigenous authorities use a '*moderate tone'* (p. 109) as a strategy to facilitate interaction with the national level; the territorial mandate emphasises how governmental policies constitute a threat for the Salia people and makes an appeal to all levels of the Colombian State to contribute in the implementation of the mandate. Implementation of the plan remains a challenge for the Salia people, especially because of lack of funding, which differs from the conditions discussed by scholars in the United States (Zaferatos 1998; Jojola 2008) and coincides with constraints identified in other cases in which Plan's implementation and continuity is uncertain (Robinson and Lane 2013; Prusak et al. 2016).

According to the findings, the regional environmental determinants have not played a role in the planning of Salia territory. The consequences from municipal level decisions over *El Duya* seem to respond more to the neglection of Salia proposals for territorial plans, rather than a strategy for indigenous territories. This can be explained by the tendency to '*eschew indigenous knowledge and ways of knowing'* (Hibbard et al. 2008, 142) or by the aim of the State to show its superiority over Indigenous peoples (Cayón Durán 2010). However, the conditions of Orocué suggest that the exercise of territorial planning in this municipality has problems in itself, which respond to general problems of the Colombian planning frame (Fals Borda 2000), as well as to municipal conditions where spatial planning is not a priority, which would explain why the municipal plan (EOT) has not been properly updated in a decade.

Finally, the question of sacred sites in Salia planning is a factor that is still not playing a visible role, however, as it constitutes a work in progress, it might gain prominence in the future. The evidence found in this research suggests that the notion of 'sacred site' might correspond to a

linguistical and cultural translation for non-indigenous Spanish speakers, which Salias have adopted in order to highlight places of special importance. This conjecture is based on the affirmation of interviewees that all the territory is sacred, which is also presented in the territorial mandate, as well as in the lack of references to sacred sites in the Salia dictionary. The details about Salia sacred sites remain a subject for further research.

In this line of thought, it should be noted that the document of the territorial mandate was formulated with the participation of non-indigenous advisors, whose influence over the contents of the mandate is not made explicit, as the texts are all written in the form of 'we, the Salia people of Orocué'. The effect of advisors over indigenous territorial plans has been discussed by several authors (Franky Calvo 2001; Berman Arévalo and Ros-Tonen 2009; Cayón Durán 2010; Procter and Chaulk 2013); nevertheless, an analysis about this influence is beyond the scope of this dissertation.

10.2.3 Looking after the territory

The findings in *El Duya* suggest that planning at the *resguardo* level follows a distinctive logic that is not included in the territorial mandate. Nevertheless, possible similar approaches between Salia *resguardos* were not explored in this research. The approach designed by the people of *El Duya* has a structural and a dynamic dimension, which appear to respond to the history of the *resguardo*, its biophysical conditions and the knowledge that the Salia people has developed through their close interaction with *Orinoquia* ecosystems.

10.2.3.1 Structural planning

The location of the first classroom which later became the boarding school constituted the first anchor for the gravitation of Salia households around this site. This is similar to what Jojola (2013) has reported regarding the construction of schools and other facilities which led to '*the emergence of modern proto-towns within reservations*' (p. 464), sometimes along roads, such as the case of *El Duya*. Additionally, the development of a housing project fostered by the department government contributed to reduce the variability in the location of houses that Salias had practiced until then. Similar processes have been described for more mobile peoples (Franky Calvo and Mahecha Rubio 2000), in which the State foster changes in indigenous settlement patterns.

Biophysical conditions in the *resguardo* are determined by a combination of savanna and gallery forests ecosystems, concave landforms and a long rainy season, which foster that most of the *resguardo* remains flooded around half of the year. Zapata Torres (2010) discusses how water, seen from a cultural perspective, is crucial for configuring indigenous territory in the *Sierra nevada*. As well, the Salias of *El Duya* base the location of houses and communal infrastructure according to their relationship to water and their knowledge about seasonal flooding, which leads to their distribution along the stripes parallel to gallery forests. Finally, Salia knowledge about the details in which flooding occurs each season. According to Jojola (2013), the way in which indigenous leadership *'manages land and distributes it for the good of the people is how they control growth. Such actions, over a long and sustained period, translate into distinctive patterns of settlement and development'* (p. 462). These factors resulted in two areas in which houses are concentrated, each of which has educational structures. Moreover, both areas, *Cucurital* and *Piñalito*, sometimes seem to '*act as collectivity*' (Van de Sandt 2007, 122), which manifests in the creation of communal shops in each settlement, for example. Nevertheless, this aspect was not further explored in this dissertation.

Consequently, the Salias of *El Duya* ended up with a large perimeter to look after, which could not be done from the two main settlements. This characteristic in addition to the history of land grabbing seems to be the cause for the creation of the structural strategy of using houses nearby *resguardo*'s boundaries as surveillance points and as landmarks to remind neighbours and those passing by of the presence of the *resguardo*. The analysis of Kent (2008) helps to explain this situation as '*the political struggle of indigenous groups to maintain or regain control of the area they inhabit not only produces changes in that territory, but also in their conceptions of what a territory is and, in their relation, to neighbouring populations'* (p. 292). Therefore, this structural planning strategy could further be considered as an outcome of ongoing territorialisation processes.

10.2.3.2 Dynamic planning in *El Duya*

Van de Sandt (2007) discusses land management and organisational features of Indigenous peoples as an expression of 'territorial defence' because '*territorial rights are ultimately asserted through the concrete and continuous use of the resources'* (p. 117). Following Rodríguez (2016), Indigenous peoples '*consider that valuing and appropriating the territory is hard to materialise without territorial protection; this is well-known by the peoples and explains the social control of territory made by the indigenous guard'* (p. 72). The evidence of *El Duya* seems to confirm this approach, considering that the institutional arrangements correspond to *resguardo* conditions (design principles 2a,

2b), which have resulted in a particular design of the functions of the indigenous guard which aim at consolidating '*territorial control processes'* (Ulloa Cubillos 2010, 78); however, they also aim at adjusting operative details such as the patrolling of roads and setting of check points near *resguardo*'s boundaries.

This social control of territory is also expressed through the *resistencias*. Like in the case discussed by Temper (2019), *resistencias* in *El Duya* constitute an expression of '*land defence through physical means'* (p. 102); however, unlike the *Unist'ot'en* people whose '*resistance is in solidarity with communities'* (p. 101) located elsewhere, the Salia people of *El Duya* uses the *resistencias* as a mechanism to open negotiation arenas that would not be available otherwise, with the purpose of enforcing previously acquired commitments or to demand solutions to unforeseen problems produced by oil extraction-related activities at the *resguardo* level. This is conceptualised by Hibbard and Lane (2004) as a '*transactive approach to planning'* (p. 103), through which Indigenous peoples can achieve outcomes resulting from negotiation.

However, planning in *El Duya* appears to correspond to a '*reactive mode'* (Mannell et al. 2013, 115), not only because they must react to pressing issues with little resources; but also because external actors tend to impose their agendas, such as the case of oil companies. Additionally, Jojola (2013) considers that the reactive mode is also caused by the weakening of dialogue among Indigenous persons, since '*the lack of meaningful dialogue has hampered the ability of tribal governance to think past their immediate deadlines'* (p. 466). Prior consultation meetings are illustrative of such conditions in *El Duya*. The results show that all meetings, except for one, lasted one day. However, time is not the only factor constraining deliberation among Salias. Considering that *El Duya* took part of one of the first six processes of prior consultation processes in Colombia in 1994 (Rodríguez 2014); it is possible to argue that Salias have developed some skills for these processes or that, at least, they are familiarised with prior consultation; which could explain that they seem to require no more than a day per meeting.

Under a rational action frame, individuals would be expected to '*select strategies whose expected benefits will exceed expected costs'* (Ostrom 1990, 193), therefore, the familiarity with prior consultation processes, which indicates that they know that the activities subject of consultation cannot be opposed, would explain why Salias have little interest in engaging in meaningful deliberation about their future, since they are aware that no matter how much they discuss, they cannot make significant decisions. Therefore, the scope of the meeting is reduced to display their negotiation skills in order to obtain as much benefit as possible through jobs,

infrastructure or agricultural projects, which correspond to the only realms where Salias have been able to mobilise their interests.

10.2.4 Indigenous jurisdiction and extractive industries

The case of *El Duya* shows that spatial environmental planning in the *resguardo* is made through parallel structures, indigenous and non-indigenous, where the latter does not interact with the former with regard to oil extraction-related projects. Moreover, non-indigenous environmental authorities' jurisdiction prevails over that of Indigenous peoples. Some authors discuss the phenomenon of non-indigenous authorities deciding over indigenous territories as a problem of participation, which could be solved through increased involvement of Indigenous peoples (Berke et al. 2002; Hibbard et al. 2008) or through the implementation of collaborative approaches (Lane 2003; Webster 2016). Literature on common pool resources tends to discuss such phenomenon as a problem of recognition, where indigenous institutions would not be sufficiently recognised by governments (Ostrom 1990; Quinn et al. 2007; Larson et al. 2015; McLain et al. 2018).

However, the case of *El Duya* shows that there is formal recognition of indigenous institutions, which are not legally included in the environmental licensing process, nor in the follow-up and monitoring of licensed activities in indigenous territories. Thus, the notions of participation and collaboration seem inadequate to analyse the frame of interaction between the Salia people and non-indigenous authorities. This situation has been produced by two interconnected elements: the lack of definition of competences for indigenous environmental authorities and the imposition of the Colombian State over indigenous institutions. It is beyond the scope of this research to study the direction and possible causality between both elements; nevertheless, the results of *El Duya* provide evidence of how they operate.

Therefore, the conditions of this case suggest that another lens is required, thus, the concept of jurisdiction[337] is used. The consequences of jurisdiction problems have been discussed mainly for Nicaragua concerning the creation of new authorities (Larson and Lewis-Mendoza 2012; Finley-Brook 2016). For the Colombian case, it could be argued that the jurisdiction of indigenous authorities is well defined, since their exercise of authority, that is, the power to make rules, takes place within the boundaries of the *resguardo* and none of *resguardo*'s institutions

[337] Jurisdiction is defined as *'the limits or territory within which authority may be exercised'*, according to Merriam-Webster dictionary. See https://www.merriam-webster.com/dictionary/jurisdiction

have effects on its surroundings. However, Colombian regulations confer specific functions to non-indigenous environmental authorities in the licensing processes, which enable them to allow oil companies to control areas of the *resguardo* and to exert authority over both, areas and companies, at the expense of indigenous authorities. This is briefly discussed by Zaferatos (2004) as 'jurisdictional encroachment' of the State '*over parts of the reservations, creating a 'checkerboard' form of regulatory control'* (p. 89). While the conditions of reservations in the United States are different from the Colombian context, the notion of encroachment summarises the phenomenon. The jurisdictional encroachment in *El Duya* has occurred by means of oil extraction. Moreover, such encroachment is likely to be replicated in other *resguardos* where extractive activities are being implemented, which turn Indigenous peoples into spectators of what occurs in their *resguardo*.

Ribot et al. (2006) discuss how under decentralisation arrangements there are cases of limitation of local powers, which '*rather than representing technical failures of adjustment (…), they seem to be intentional, even if not self-conscious, mechanisms to serve the interests of those who are already in control'* (Ribot et al. 2006, 1880). Using the lens of jurisdiction, it could be argued that the limitation of powers affects all subnational units in Colombia, which are subject to the supremacy of national environmental authorities according to the legal distribution of competences. However, the results for *El Duya* show that this territory has been further restricted, because while municipal authorities have been informed or even asked to take part of processes related to environmental licenses; Salia authorities have been neglected. This situation has been enabled by the reluctance of the Colombian State to define competences for indigenous authorities regarding environmental matters, where indigenous and non-indigenous authorities have a different status (Puyana Mutis 2013). The concept of jurisdiction contributes to analyse the social-ecological system (SES) as '*part of a political process'* (Agrawal 2003, 258), because it requires to consider boundaries in relation to other relevant actors. Moreover, if understood through its spatial connotation, the concept of jurisdiction could help to clarify the use of the concept of authority, where the latter corresponds to the power to make rules and the former corresponds the place where that power can be exercised.

On another note, the jurisdictional encroachment leads to areas in the *resguardo* where indigenous spatial planning is not possible because oil companies are exerting operative control over the territory. Therefore, regardless of the provisions that Salias have defined for such area, they cannot implement their planning. Boiral et al. (2020) argue that conflicts between Indigenous peoples and extractive industries could decrease through the building of

trusting relationships and Indigenous peoples' involvement in environmental management. However, the question of the loss of control over their own territory in favour of extractive industries, suggests that more complex variables should be considered. On the one hand, since Indigenous peoples cannot oppose extractive activities in their territories, they are forced to bear a day-to-day interaction with external actors in their homes. On the other hand, the presence of extractive activities in their territories constitutes a transgression of their territorial sovereignty. Hence, the development of trusting relationships between Indigenous peoples and those who impose their presence to them seems unlikely. Furthermore, jurisdictional encroachment of non-indigenous environmental authorities over the *resguardo* has made possible that oil extraction- related companies generate environmental impacts inside *El Duya* that would not occur otherwise, especially those produced by seismic prospecting and oil drilling, for which Salia's environmental planning has no management tools. Therefore, a novel environmental reality has been imposed over the Salia people under this frame.

Finally, the results of *El Duya* further show that oil companies have generated impacts that have not been assessed by non-indigenous environmental authorities. Therefore, environmental impacts have taken place in the absence of knowledge about their extent and the need to implement mitigation or compensation measures, which means that it is likely that these impacts have produced risks for the Salia people of *El Duya*, as it has been documented for other Indigenous peoples who live in places with oil extraction *'and depend on the health of their territories for their survival and well-being'* (Orta Martínez et al. 2007, 9).

10.2.5 The concept of environmental sustainability in indigenous territories

The results of this research show that the concept of environmental sustainability is used differently among Indigenous peoples and that governmental institutions have multiple understandings. The fact that the concept was barely used in *El Duya* suggests that the term itself is not necessary to express the idea of the continuation in time of the ecological base that makes existence possible through several generations. Jojola (2013) explains that it is common among Indigenous peoples to have intergenerational relationships which '*give credence to the collective notion that those yet unborn will inherit that which has already been gained and valued*' (p. 457). This is the substance of day-to-day life in the *resguardo*. The people of *El Duya* tends to talk about looking after nature or protecting the environment. Leaders, both at the *resguardo* and

the municipal level, use the verb to 'conserve'. However, they don't seem to link these notions to larger conceptual trends.

Moreover, when they refer to the protection of nature, they seem to discuss in terms of the contrast between their traditional livelihoods and what the oil companies or non-indigenous peoples can do. Some authors discuss how the idea of untouched nature could be foreign to some Indigenous peoples (Hibbard et al. 2008; Porter 2010), because they have actively shaped their environment. This could partially explain that the Salias of *El Duya* have not engaged with the use of non-indigenous concepts as the case of other Indigenous peoples, where NGOs and conservationist actors have been more active (Berman Arévalo and Ros-Tonen 2009). As well, their active use of the concept of Mother Earth and its preminence during *resistencias*, suggest that the idea of defending the Earth as a living being from oil companies is more appropriate for the people of this *resguardo*.

Finally, the concept of pervivencia which is included in the title of Salias' life plan, is used by the Salia people to discuss their continuity; however, as their understanding of their existence is inextricably bound to the well-being of nature, when the Salia people discuss the concept of '*pervivencia',* they are implicitly discussing the natural base or ecological conditions that are necessary for future generations. The extent to which this concept is used on a daily basis at the *resguardo* level remains a topic to be investigated.

10.3 Territorial autonomy: the need for further conceptualisation

The way in which the concept of autonomy is addressed by scholars can be very fuzzy, which could mean that the discussion is not made for the same construct. The results of *El Duya* show how the concept of territorial autonomy, as discussed by Suksi (2011), can be used to discuss *resguardos* in Colombia, even if some authors consider that, in the absence of indigenous territorial entities (ETI), there is no autonomy for Indigenous peoples as established in the Colombian constitution (Baena Carrillo 2015). Hence, when scholars discuss autonomy for contexts where there are territorial autonomy arrangements such as Nicaragua and Bolivia, it is likely that the discussion corresponds to a similar frame. However, the use of concepts like self- government, decentralisation or independence as synonyms of autonomy, may affect the analysis, especially if the context is one in which territorial autonomy arrangements exist.

For example, notions such as local or formal autonomy to make rules (Ghate 2000; Chhatre and Agrawal 2009) and enforce them (Ostrom et al. 1999) do not provide information about the ability of the Salias of *El Duya* to craft their own governmental structures to self-govern, because they require further elaboration about the characteristics of *'the tension between engagement with and autonomy from the state'* (Goodwin 2019, 509). Moreover, it would be valid to consider non-State actors such as armed groups in the Colombian context (Van de Sandt 2007). The discussion of autonomy in terms of decentralisation (Ribot et al. 2006), appears to be inappropriate for the case study, considering that the Colombian decentralisation arrangement is implemented for subnational units (Baena Carrillo 2015), not for *resguardos*[338]. However, this is not an obstacle for considering *resguardos* as having territorial autonomy. Thus, more clarity can be gained from the use of the concepts of 'power distribution' or 'enumeration of powers'; in contrast to the notion of decentralisation, which could become relevant for *resguardos* in the future, once they become indigenous territorial entities.

Finally, the use of the idea of independence from the State along with autonomy could be misleading, because of the inaccuracy of linking independence to secession or statehood. The results of this research provide no evidence of indigenous autonomy as leading to secession. Moreover, some indigenous interviewees addressed such misconception explaining that Indigenous peoples have not renounced their condition as Colombians, which corresponds to what scholars have discussed[339] (Franky Calvo 2000; Van de Sandt 2007; Ulloa Cubillos 2011; Rodríguez 2016). Therefore, instead of discussing institutional arrangements and the ability of appropriators, common pool resources or social-ecological systems to craft their own rules and enforce them in terms of autonomy, it might be more helpful to address their core variables separately.

10.3.1 Authority and decision-making as a component of autonomy

Under the frame of territorial autonomy, the powers distributed to the autonomous unit are exerted by its authorities. Therefore, regardless of the type of mechanisms used for the law or rule making, participatory or not, authorities are the ones entitled to exercise such power. In *El Duya*, authority is exercised by indigenous governmental structures, elders and the general assembly. Following Larson (2010), the analysis of Salia authorities should be made in relation

[338] See the work of Duarte Torres (2015) for an opposite approach. Cited in this dissertation.
[339] In contrast to some findings for Nicaragua. See: Finley-Brook and Offen (2009). Cited in this dissertation.

to the people of the *resguardo* and to the Colombian State. Thus, the results of *El Duya* show that indigenous authorities have been able to exercise power to make rules and implement them, mostly for Salias and to a lesser extent for non-indigenous persons; however, under a limited frame. Limitations are related to the type of ecosystem component and to the exploration or extraction of hydrocarbon resources.

On the one hand, this appears to respond to a wider frame of unclear definition of indigenous authorities' competences in Colombia, in line with analysis made for other Indigenous peoples with regard to overlapping of protected areas over *resguardos* (Premauer 2013). On the other hand, this seems to result from the dominance of naturalist non-indigenous ontologies which allow for the conceptual fragmentation of territory (Rowlands Narváez 2013), which prevail over indigenous ones, regardless of the damages inflicted on Indigenous peoples' ways. Thus, the territorial autonomy of the Salia people of *El Duya* is not only a matter of regulations and participation, but also of the conceptualisation of the Colombian State in itself.

Rodríguez (2008), discusses how decisions made by non-indigenous environmental authorities can generate environmental conflicts, which negatively affect Indigenous peoples' rights. This sort of approach provides support for arguments that favour increased participation of Indigenous peoples in decision-making (Berke et al. 2000; Hibbard et al. 2008, Jordán Ramos 2010). However, the results of *El Duya* suggest that it might be necessary to distinguish decision-making from decision enforcement, taking the example of the infrastructure of the field *Caño Duya*-1. The dwellers of *El Duya* have decided that such infrastructure should be removed from the *resguardo* and bioremediation procedures should be applied in the area. Indigenous authorities have attempted to enforce that decision through legal instances; however, the decision has not been implemented. Following Matunga (2013), this would correspond to an expression of the dual planning system in place, in which the people of *El Duya* may be able to exert control over their planning and *'to use both customary and contemporary indigenous practice to implement their decisions. However, mainstream planning is ultimately controlled by the settler state and therefore, able to wield its hegemonic influence as it wishes'* (p. 21). Therefore, the gap between decision-making and enforcing might respond to volition or contradictory arrangements among non-indigenous authorities; however, questions of power relations (Howitt and Suchet- Pearson 2006; Larson and Lewis-Mendoza 2012; Prusak et al. 2015) or asymmetry (Van de Sandt 2007; Puyana Mutis 2013), along with jurisdictional encroachment should be considered.

Further elements about the question of deciding can be drawn from the analysis of the design principles for *El Duya*, considering that institutions determine who is eligible to make decisions, what procedures must be followed and what rewards must be assigned (Ostrom 1990). The situation of *El Duya* suggests that decision-making may be graduated according to the issue of interest, where all Salia individuals may be involved through the general assembly. However, enforcement of decisions is invariably made by Salia authorities. McLain et al. (2018) argue that the enforcement of '*management decisions'* (p. 215) is related to institutional design principles about monitoring and graduated sanctions, in which the role of authorities is paramount. Therefore, understanding the characteristics of authorities may contribute to improve the analysis of design principles 4a, 4b and 5. Decision-making seems to correspond to a quality of the group or system or people who crafts institutions, which can be carried out mainly by authorities, like in Salia customary institutions or by the collective, like in Salia novel institutions. In contrast, the enforcement of decisions depends on the scope of action of authorities, which is determined by the powers distributed through the autonomy arrangement. Therefore, the discussion about territorial autonomy seems to require of an explicit analysis about decision-making and their implementation, where the latter will invariably require of discussing the exercise of authority in terms of engagement with (Goodwin 2019) or disengagement from external actors.

10.3.2 Indigenous territorial autonomy in Colombia

Several authors have shown how indigenous territorial autonomy has been limited in Colombia by governmental and non-governmental actors (Van de Sandt 2007; Ulloa Cubillos 2010; Baena Carrillo 2015; Rodríguez 2016). The results of *El Duya* provide a detailed account of the way in which enumeration of powers concerning ecosystems and their components is not well defined; in spite of formal recognition of indigenous authorities and jurisdiction. Therefore, it is possible to argue that the territorial autonomy arrangement that is currently valid for *resguardos* cannot be described as an absolute condition that is present or absent.

Similarly, Baena Carrillo (2015) argues that territorial autonomy in Colombia corresponds to a 'simple' type of autonomy, as it is currently established; in contrast to an 'enhanced' type, which would address the special bundle of rights granted by the national constitution. However, the conceptualisation of relational indigenous autonomy (Ulloa Cubillos 2010, 2011) appears to describe better what was found in *El Duya*. This notion '*results from the negotiations*

and interactions among different actors' (p. 81) and should not be understood as a permanent condition but as the outcome of multiple '*partial and situated processes'* (p. 104), in line with the notion of autonomy discussed by Goodwin (2019) for the Ecuadorian context.

The findings show that the Salias of *El Duya* exercise their territorial autonomy concerning ecosystems and their components at different extents depending on which actors, activities and types of components are involved. Indeed, Salias interact with external actors in that exercise; however, their ability to negotiate under the frame of jurisdictional encroachment is exiguous. Thus, the location of the road has played a crucial role in Salias' ability to create negotiation arenas that otherwise would not exist, not only to guarantee that neglected agreements are respected, but also to gain political leverage concerning external actors. On that ground, *resistencias* can also be considered a novel expression of collective action and an expression of their exercise of territorial autonomy. Nevertheless, the potential of this mechanism is limited to the interaction with oil companies. Interaction with national level authorities and transformations concerning jurisdictions surpass the scope of *resistencias*.

The qualities of relational and variable of indigenous territorial autonomy in Colombia are discussed by some authors in terms of the contradictions that the Colombian State exhibits towards Indigenous peoples (Cayón Duran and Turbay Ceballos, 2005; Rodríguez, 2008; Asher and Ojeda, 2009); however, scholars working on decentralisation have also shown that the State is not a homogenous body. Therefore, this phenomenon is not circumscribed to Indigenous peoples, considering that 'w*hile some elements within the state pursue decentralization policies, others find their interests better served by resistance to decentralization'* (Ribot et al. 2006, 1881), which has also been discussed for the Colombian case (Vieco Albarracín et al. 2000; Falleti 2005). However, the systematic reluctance to regulate indigenous territories through the organic law for territorial planning (LOOT) for 29 years, suggests that there are more elements involved than mere contradictions.

Chirif (2015) discusses indigenous territorial entities (ETIs) in Colombia and affirms that '*the question of ancestral territories includes, at the same time, property and government'* (p. 74). Similarly, Larson (2010) discusses how in the case of Nicaragua, some political leaders aim at configuring territories in such a way that regional autonomy is strengthened, which allows to see the relation of '*property and authority to the process of state formation'* (p. 1151). Despite differences in terms of the context and characteristics of autonomy, this analysis about Nicaragua provides input to understand why ETIs continue to be contested, because once they are finally regulated, they would hold the potential to directly influence the Colombian State formation.

Fals Borda (2000) discusses how ETIs could trigger a political and territorial rearrangement, which has been interpreted by non-indigenous actors as a threat to the integrity of the country (Franky Calvo 2001).

The consequences of potential territorial rearrangements include the reduction of territorial control of municipalities and departments[340] and a transfer of financial resources towards ETIs, which would reduce the income of municipalities and departments, as Indigenous peoples would administer such resources directly. Finally, the subnational electoral landscape would be modified, since it is likely that indigenous populations registered as inhabitants of ETIs could not be registered at the same time in another territorial entity. In Orocué, for example, the Salia population corresponds approximately to 24 % of the total municipal population and represent a considerable amount of votes. If the eight *resguardos* were to become and ETI, this population would no longer take part of municipal elections. Therefore, the creation of ETIs could disrupt existing political practices, which are strongly based on clientelism in Colombia (Fergusson 2019) and would contribute to explain why indigenous territorial autonomy in Colombia has not been developed to its full extent.

10.3.3 Planning and autonomy

The results of this research suggest that, in addition to contradictions and decentralisation problems, the relation between Indigenous peoples and the Colombian State might require an analytical shift, away from the common view of indigenous communities as culturally distinctive minorities oppressed by the Colombian State. While oppression has been well documented (Gómez López 1989; Roldán Ortega et al. 1995; Houghton 2008; ONIC 2015; Broch et al. 2017); Indigenous peoples are more than vulnerable subjects (Haalboom and Natcher 2013) and passive recipients of State policies. The Colombian case, precisely, shows how Indigenous peoples have consistently appropriated available legal tools (ONIC 1991; Van de Sandt 2007; Ulloa Cubillos 2011; Quiroga Zuluaga 2015) and have created novel instruments (Santamaría Chavarro 2013; Puyana Mutis 2013), which have changed the political landscape through their quest for autonomy (Van Cott 2000).

[340] The works about Bolivia offer more insights concerning the extent to which indigenous territorial autonomy can foster transformations on administrative boundaries; however, Bolivian conditions are distinctive. See: Garcés Velásquez (2011): incorporation of autonomy in the constitution, Tockman et al. (2015) and Augsburger and Haber (2018): Indigenous Original Peasant Autonomies; Tamburini (2012): jurisdiction and autonomy from a legal perspective.

In this line of reasoning, it is possible to argue that Indigenous peoples have contributed in the formation of the Colombian State and that this includes more than its governmental structure. Thus, the State would be a more encompassing structure formed by the Colombian people, where indigenous governments would correspond to one of the several expressions of the gamut of Colombian governmental structures. Accordingly, the interactions between Indigenous peoples and the Colombian State could be analysed as government-to-government relations (Zaferatos 1998; Barry 2012; Ugarte 2014). This analytical perspective was proposed by the Permanent negotiation roundtable (MPC) in 2013 (MPC 2015) and is close to recent discussions about environmental justice, which highlight how indigenous approaches can contribute to the broadening of current notions about State and law (Ulloa Cubillos 2017; Temper 2019). However, the case of *El Duya* points to unresolved elements for Indigenous peoples, among which land-grabbing continues to be a core issue; in contrast to perspectives that consider a question of the past which is *'unlikely to reoccur'* (Hibbard et al. 2008).

Moreover, the results of *El Duya* show that challenges persist even when formal titles have been granted. Therefore, if Indigenous peoples are a constituent part of the Colombian State, land-grabbing is not merely an indigenous issue but a State matter. This phenomenon occurs as well in other regions in Colombia (Bryan 2012); however, for the case of *El Duya* it could be explained through the analysis of frontier spaces' dynamics. According to Rasmussen and Lund (2018), frontier spaces '*are intimately connected to commodification through processes of dispossession involving enclosures, land grabbing, and other forms of primitive accumulation'* (p. 389). Therefore, non-indigenous actors have approached *Orinoquia* region through the commodification of land and ecosystems. This phenomenon has been enabled by the notion of *baldíos* which portray lands as "*ungoverned', 'natural, or 'uninhabited' spaces'* (Rasmussen and Lund 2018, 388) which await their conquering, where the *resguardo* title became a formal barrier for this phenomenon.

The inability of titles to halt land-grabbing in indigenous territories is further enabled in *El Duya* by its regional conditions, discussed in section 6.3.1., which maintain a social order in which racism towards Indigenous peoples fosters aggressions from those who consider themselves superior (Bjork-James 2014). As well, the lack of monitoring from national level agencies and the slow response of the judiciary towards the encroachment over indigenous property, foster that rule-breakers '*adopt a higher rate of rule-breaking behaviour'* (Ostrom 1990, 186). This reinforces '*social discrimination'* (Rodriguez 2016, 41) which affects Indigenous peoples' access to justice in Colombia. On that ground, State tolerance of land-grabbing would reflect a deviation from the social rule of law established through the national constitution.

The Salias in Orocué have decided to oppose certain governmental policies by choosing not to take part on them, like 'Reducing emissions from deforestation and forest degradation in developing countries' (REDD) for example. This is an aspect of their exercise of 'territorial sovereignty', which means that *'their autonomy and the exercise of authority over the territory are not submitted to the global development model pretensions'* (Rodriguez 2016, 72). Thus, Salia planning practices contribute in the operationalisation of such sovereignty, which acquire meaning under the frame of government-to-government relations. In this line of reasoning, the concept of jurisdiction of indigenous authority, framed in terms of '*respect for jurisdiction and cooperation between Indigenous and non-Indigenous interests in planning'* (Ugarte 2014, 410), would acquire relevance beyond the specificities of the Colombian arrangement.

Finally, the case of *El Duya* shows that prior consultation can hardly be considered a planning practice. The case show that the Salias of *El Duya* have not been able to enforce their decisions over spaces that remain under the control of non-indigenous actors, even if they are inside the *resguardo*. Moreover, the very essence of prior consultation in Colombia deprives Indigenous peoples from deciding to refuse the subject under consultation. Hence, prior consultation, as it is currently operationalised, constitutes a '*structural limitation'* (Procter and Chaulk 2013) to indigenous planning in *El Duya*; however, this should not be understood as an argument against prior consultation. Several scholars have already shown the importance of this mechanism for Indigenous peoples (Aylwin 2014a; Rodríguez 2011, 2016; MacInnes et al. 2017). As well, the case of *El Duya* shows how the Salia people has used prior consultation arenas to advance their own agendas, for example, through the creation of the communal farm with money obtained from a compensation. Nevertheless, the findings of this research allow to argue that such advance has occurred only when non-indigenous actors have allowed it. Therefore, the ultimate instance for decision-making and its enforcement is not under the control of the Salia people.

Consequently, the current jurisdictional encroachment over authorities of *El Duya* constitutes a major restrain for indigenous territorial autonomy, which keeps the dwellers of this *resguardo* from planning the well-being of themselves and their ecosystems into the future, undermining their self-determination. This condition is detrimental for the Salia people and for the exercise of territorial planning beyond *resguardo* scale, because there is no meaningful interaction between jurisdictions, which results in ecosystem management contradictions and incongruent environmental planning.

11 CONCLUSIONS

This dissertation has been conducted in order to understand the contribution of autonomous indigenous institutions to environmental sustainability in indigenous territories. For this purpose, the *resguardo El Duya* of the Salia people was analysed as a social-ecological system, using the institutional design principles (Ostrom 1990; Cox et al. 2010) as its main theoretical foundation. The approach adopted in this research included the use of the social-ecological systems framework (McGinnis and Ostrom 2014) to identify the relevant variables of the system prior to the evaluation of the design principles. As well, the theoretical approach of this dissertation incorporated inputs from indigenous planning literature (Jojola 2013) to enrich the analysis. The following sections present the conclusions emerging from the three specific research questions

11.1 Human relationship with the territory

Before the titling of *El Duya*, Salia institutions have mediated their relationship with ecosystems and their components along a gradient in which stability and customary institutions used to be dominant until the decade of 1970. From this time onwards, institutional change became more dynamic due to external disturbances fostered by non-indigenous actors. In this process, the titling of the *resguardo El Duya* constitutes a milestone in Salia institutional change, as well as in the bounding of the current social-ecological system and the emergence of novel territorial dynamics, which initiated territorialisation processes that led to changes in the way in which ecosystems and their components had been appropriated. As well, oil drilling in the *resguardo* triggered social, cultural and economic changes which unsettled customary institutions and continue to challenge Salia institutions. Moreover, oil extraction-related activities have launched negative changes in the state of ecosystems, which have not yet been addressed by Salia institutions.

Customary Salia institutions have lasted for centuries and are based on the law of origin which stablishes that relationships with nature or Mother Earth should be respectful. Moreover, individual lives are inextricably related to Mother Earth's life; therefore, harming or disrespecting nature affects the health of Salias. However, the influence of customary institutions has been diminishing. Novel Salia institutions are different from customary

institution and have been in place since the decade of 1980. The differences correspond to a lessened influence from Salia worldview in favour of a higher influence from non-indigenous institutions. Both types of institutions coexist in *El Duya*; however, there currently is a mismatch in the extent of the regulation of the relationship with nature, since novel institutions have not yet compensated the retraction of customary ones, leaving some appropriation practices unattended.

Despite the weakening of customary institutions, they persist in the *resguardo* and interact with the novel arrangement. Considering that both types conform to most of the institutional design principles, further institutional changes could be expected in *El Duya*. As well, since most of the principles are present, the analysis for *El Duya* shows that Salia institutions can be characterised as robust and that their management of ecosystems has been successful so far. Assuming no significative change in internal and external conditions, the social-ecological system could be expected to maintain its integrity in the future, with nature in a good state (absence of ecosystem degradation), and with continued Salia collective action.

11.2 Indigenous environmental planning

Environmental planning in the *resguardo El Duya* has been implemented by indigenous and non-indigenous actors. Among the latter, governmental and non-governmental actors have played a crucial role. At the operational level, Salia planning corresponds to the actions of individuals inside the *resguardo*. The collective level corresponds to the social-ecological system level or the r*esguardo*. The constitutional level corresponds to the Salia traditional territory and encompasses the eight Salia *resguardos* of Orocué.

Indigenous planning at the constitutional level has been made through the territorial mandate, which addresses environmental and territorial concerns for the eight Salia r*esguardos* as well as for the traditional territory. The mandate contains environmental planning provisions that still have no spatial expression; moreover, most of its strategic components have not been implemented. As well, it contains norms to be applied at the operational and collective-level, which do not limit the scope of *resguardo* planning.

Collective-choice level planning in *El Duya* currently has two forms, structural and dynamic. Structural planning corresponds to the location of houses and infrastructure, which results from the combination of biophysical conditions and the knowledge that Salias about them.

Spatially, this form of planning is expressed in the emplacement of houses along stripes parallel to gallery forests, as well as in the in the strategic location of some houses in the main entrance points of the *resguardo*. Dynamic planning corresponds to the social control of territory developed through *resistencias,* which are carried with the engagement of all dwellers, and monitoring, which is carried out by the indigenous guard.

According to Jojola (2013), the three tenets of indigenous planning highlight that indigenous voices do not need to be translated, that the essence of indigenous knowledge is the native self and that the planning process must be informed by indigenous worldviews. These three tenets are met at the operational and collective level in *El Duya*; however, this planning has been of a reactive nature due to the influence of external non-indigenous actors, mainly oil extraction-related companies. Moreover, the people of *El Duya* have scarce tools for enforcing their decisions.

The activities of non-indigenous actors threaten the integrity of the social-ecological system, which is evident in land grabbing phenomena and in the loss of control over the territory caused by the presence of oil extraction related activities, through installed infrastructure, as well as transport and prospection activities. Moreover, these activities produce environmental impacts, which have not been adequately managed by companies. This situation has been enabled by the exercise of jurisdiction of non-indigenous environmental authorities over *resguardo*'s territory, resulting in the approval of environmental licenses for such activities. The analysis led to conclude that the intervention of non-indigenous environmental authorities over *El Duya* has contributed poorly in maintaining the integrity of ecosystems in the *resguardo*. Therefore, the people of *El Duya* attempt to plan their territory in an asymmetrical setting, which deprives them from significant planning powers concerning the areas in which oil extraction-related activities are carried out.

Under these conditions, the Salia people of *El Duya* have sought to be more involved in environmental management and planning, through their appeal to non-indigenous environmental authorities to exert control over oil companies. However, this has not resulted in increased interactions between indigenous and non-indigenous environmental authorities. Furthermore, since spatial environmental planning in the municipality of Orocué is currently incoherent, there is no interplay between indigenous and non-indigenous planning at the municipal level. This situation is aggravated by the large number of hydrocarbon blocks found in Orocué, most of which are in an active stage, either through exploration or production; because in the absence of municipal orientations, spatial environmental planning is being made

by the national environmental licensing authority (ANLA) through the zonings approved in the environmental licenses. Thus, this research provides arguments that support the use of the concept of jurisdiction in relation to competing or overlapping institutional arrangements.

Finally, the use of the concept of environmental sustainability was not found among the Salia people. Nevertheless, their planning is concerned with their continuity in the future based on their dependence on nature in the *resguardo*, even if called differently. This concern is addressed at the constitutional level through the reinvigoration of customary practices, the adoption of corrective measures for the recovery of biodiversity and through the enlargement of the *resguardos*, which is reflected in the proposal of creation of areas of strategic ecological and cultural value. The latter, however, is not equivalent to the banning of nature appropriation and is focused in augmenting Salia territorial control. At the *resguardo* level, the continuity of the social-ecological system is expected to be achieved through the preservation of their traditional livelihoods, framed in the understanding that Salias have been able to look after nature until present day.

11.3 Indigenous territorial autonomy and nature

The findings for this research show that the people of *El Duya* have exercised their autonomy to a limited extent concerning certain ecosystems and their components. Salias have autonomously exercised authority, decision-making and their enforcement when non-indigenous environmental authorities have not intervened. This situation results from the jurisdictional encroachment over indigenous authorities, which has been enabled through the process of approving environmental licenses and permits mainly in relation to oil extraction-related activities.

The encroachment is based on the imposition of non-indigenous authorities' jurisdiction over the *resguardo* and on the understanding of hydrocarbons as an exclusive competence of national level governmental agencies, which responds to a naturalist ontology that clashes with Salia relational ontology. Under this frame, non-indigenous environmental authorities hamper Salia territorial autonomy by allowing that oil extraction-related activities can be carried out in the *resguardo* while Salias cannot oppose. Then, oil extraction-related companies operationalise the hampering of Salia autonomy through the physical occupation of areas in the *resguardo* and Salia traditional territory, where Salias cannot exert control. However, Salia territorial

autonomy is further limited through the exclusion of Salia people from environmental planning. Salia territorial autonomy has been hampered when:

a. National level governmental authorities[341] have authorised oil extraction-related projects inside the *resguardo* and neighbouring locations since 1994, under a frame in which Salias have not had the power to oppose. Therefore, Salia's self-determination has been undermined.

b. National and regional level environmental authorities have excluded Salia governing bodies in the follow-up and monitoring of oil extraction-related activities, limiting, thus, their access to timely information.

c. The regional environmental authority has neglected Salia people's participation in the formulation of the management plan of *Caño San Miguel*. Salia people was only involved through a prior consultation process and was excluded from the first stage of formulation, when the participation strategy is defined. Therefore, their ability to make decisions over their territory has been restricted.

d. Oil extraction-related companies have neglected the Salia people by carrying out activities inside the *resguardo* without informing Salia authorities, such as seismic exploration activities. As well, the disregard of agreements reached with Salia population has undermined Salia authority.

e. Municipal authorities have neglected Salia territorial planning, through the omission in coordinating territorial municipal plans with Salia instruments and through the reluctance to fund projects prioritised by Salias.

Therefore, the Salias of *El Duya* have exercised autonomy concerning ecosystems and their components in a limited fashion. This has occurred since the middle of the decade of 1980, when the first drilling took place, until present day. The exercise of indigenous authority and the ability to enforce decisions have been constrained by non-indigenous governmental authorities, under a legal frame of unclear distribution of powers for indigenous authorities concerning environmental matters.

The removal of limitations to Salia territorial autonomy concerning the use of ecosystems and their components requires of transformations in the Colombian State and its governmental

[341] Mainly the national hydrocarbons agency (ANH) and the national environmental licenses agency (ANLA).

structures. Transformations in the State include the abandonment of the notion of subsoil resources as separated from territories and the reformation of prior consultation processes to increase enforceability of Indigenous peoples' decisions. As well, they include the definition of competences for indigenous authorities and the promotion of indigenous territorial entities (ETIs), under the notion of government-to-government. Transformations in the government include the implementation of respect for jurisdiction as a guiding principle and the creation of cooperation mechanisms for relations with indigenous authorities. These transformations would make way for an exercise of indigenous autonomy at its full extent.

11.4 Contributions to environmental sustainability

According to the results of this research, the concept of environmental sustainability is not used by the Salia people. As well, they show that the meaning of this concept is not univocal for relevant actors connected to environmental matters. Therefore, the answer to the general question that guided this research is provided with regard to the concept of environmental sustainability used to underpin this dissertation.

The definition used in this research states that environmental sustainability is '*the existence of the ecological conditions necessary to support human life at a specified level of well-being through future generations*' (Lélé, 1991). Thus, it is possible to conclude that autonomous Salia institutions have contributed to environmental sustainability of *El Duya*. This is evident in the maintenance of the integrity of the social-ecological system (SES) during the past decades until present day, despite the external disturbances identified in this research. The current integrity of these ecosystems cannot be explained by its remoteness or isolation, since *El Duya* is with crossed by a main road and is located near the urban area of Orocué. Moreover, unlike more isolated SES, the people of this *resguardo* have been exposed to the use of technologies with high capacity to transform ecosystems, such as explosives for seismic exploration or the building of infrastructure for oil extraction, for almost three decades. Nevertheless, the Salias of *El Duya* have not made signifcant transformations to their ecosystems, even though the floodability of savannas highly restricts productive activities in the *resguardo*. In this line of thought, it is useful to address the three components of the definition of environmental sustainability in order to outline the traits of the identified contributions.

Regarding the existence of ecological conditions necessary to support human life, the Salias of *El Duya* have been able to maintain functional gallery forests, savannas and aquatic ecosystems,

from which they have been deriving their sustenance until present day. Currently, the dwellers of *El Duya* are producing low impacts over the ecosystems inside this *resguardo,* such as decrease of air, water and soil quality, as well as biodiversity loss. However, Salia's management has not triggered abrupt ecosystem transformations. Moreover, these ecosystems continue to be highly connected to the dynamics of the larger matrix of the floodable biome, which is highly biodiverse (Baptiste Ballera et al, 2011; Ariza Ramírez and Baptiste Ballera, 2011). This suggests that the ecosystems in this *resguardo* continue to contribute to the maintenance of ecological processes inside and outside its boundaries. This contribution has been made as part of the exercise of Salia territorial autonomy, through which the Salia people of *El Duya* have crafted their own institutions to regulate the appropriation of nature.

Using non-indigenous notions of human well-being, it seems that the dwellers of the *resguardo* have improved their material conditions concerning access to education, health services, public transport, wastewater management, water supply, domestic electricity and gas supply if compared to previous decades. As well, the levels of income and access to novel technologies have increased in *El Duya*. However, the quality of public services is low, like in most rural areas in Colombia, which cannot be improved through increased income and access to technology. Therefore, it could be argued that current levels of well-being for the Salia people of *El Duya* should not be taken as a benchmark, since they need of improvement.

Nevertheless, the contribution to environmental sustainability is fostered by Salia's definition of human well-being, which constitutes an expression of their self-determination. The life plan of 2005 states that well-being is conceived through *'two fundamental aspects: spiritual and material'* (Pueblo Sáliba 2005, 169). Later, the updated version states that well-being is the opposite of illness and that both depend on the relationships with and behaviours towards nature. Therefore, the '*social, spiritual well-being of the individual or the collective is the expression of harmony and balance in the collective values of unity, territory, culture and autonomy with the support of ancestral laws'* (Pueblo Sáliba 2011, 70). If well-being is understood according to these texts, then the notion of Salia well-being as intrinsically intertwined with the maintenance of good ecological conditions could be considered as mutually reinforcing with the idea of protecting nature. Evidence of Salia's understanding of this interrelatedness is found in customary institutions with their emphasis on respect for Mother Earth, as well as in current strategic planning based on the maintenance of traditional Salia livelihoods, which are completely dependent on nature.

Regarding the component of future generations, the explanation offered by Jojola (2013) about intergenerational relationships is illustrative of the conditions of *El Duya*, where multiple

generations take part of decision-making and enforcement in planning processes. Thus, Salia autonomous institutions enable deliberation and decision-making in arenas in which younger generations can actively take part. Therefore, the contribution to environmental sustainability is made through the opening of environmental planning instances to young people.

Consequently, it is possible to conclude that indigenous autonomous institutions do contribute to environmental sustainability in *El Duya*; however, these contributions should be understood in terms of what Salia autonomous institutions enable in relation to environmental sustainability, along with current limitations to autonomy: jurisdictional encroachment, land grabbing and environmental impacts. Accordingly, positive future outcomes can be expected and further contribution to environmental sustainability in the *resguardo* if: a) the conditions of the social-ecological system do not change abruptly, b) institutional changes are implemented to address current challenges related to the mismatch between customary and novel institutions and c) environmental impacts produced by current Salia lifestyle are mitigated.

11.5 Further research

This research has provided situated knowledge about how Indigenous peoples craft institutions concerning ecosystems and their components. Consequently, it adds to the small group of literature studying institutional design principles in complex social-ecological systems and contributes to the study of indigenous territories conceptualised as systems, comprised by social and ecological subsystems and the interactions between them.

Since there is no standardised way to evaluate the design principles, the approach used in this research was based on the description of how the principle was expressed in the institutional arrangement under analysis, considering principles as present, even if their expression was weak. Nevertheless, this research is based on a single case study, which means that the approach taken here cannot be used to propose a protocol to evaluate each principle. Therefore, it is necessary to further develop metrics to determine if the design principles are met, so comparative analysis between large n studies can be made without losing the richness of the case analysis. This remains a pending task for common pool resources scholarship.

Furthermore, the empirical analysis of *El Duya* shows that the many variables involved in each design principle, as well as the influence of external situations and actors, make it extremely difficult to determine causality. Therefore, the principles have a limited predictive power

regarding the future of the social-ecological system (SES) and predictions require of assuming that the system will not change significantly. This limitation is related to how poorly addressed are contextual factors by the institutional design principles. Even though principles seven and eight consider external actors explicitly; the case of *El Duya* shows that external political and economic settings, which have directly affected the social-ecological system, could not be fully grasped through the design principles, which are based mainly on rules. Accordingly, the use of the social-ecological systems framework in this research contributed to provide a more thorough description of relevant external settings, in line with the purposes identified for this framework '*the analysis of findings about the sustainability of complex SESs*' (Ostrom 2009, 420).

Another critical point is that the crafting of institutions is not based solely on '*the net flows of expected benefits and costs to be produced by the set of status quo rules*' (Ostrom 1990, 142). In contrast, the findings for *El Duya* suggest that institutions are also crafted based on cultural/ontological understandings of life and nature, which are difficult to fit in the theoretical frame of the design principles. For example, the control that some elders continue to exert over large forest areas versus the enhanced benefits that the redistribution of these areas would have for the collective. Consequently, the institutional design principles would require of additional inputs to guarantee that cultural aspects are not disregarded. On this score, the incorporation of categories based on indigenous planning literature were paramount for this research.

It should be kept in mind that the analysis of customary institutions allowed to identify a condition not quite discussed in the literature, namely, the absence of monitoring units in the system. In the case of the Salia people, this responds to their understanding of the compliance of customary rules as safeguards for the balance of the whole system. Therefore, since transgressions result in the disruption of the balance, then they are evident, and no further actions is needed to detect infractions. Such condition is possible under a relational ontology; in contrast to the common analytical frame of non-indigenous scholarship. Consequently, special attention is needed in order to avoid that further research reaches the conclusion that monitoring is non-existent, instead of considering the ontological frame and the possibility of monitoring being embedded in the system.

The use of the design principles as a theoretical lens should also question the link that some scholars have established between principle seven and the notion of autonomy. According to this research, such link may add conceptual confusion to the analysis. Moreover, this research has shown that discussions about autonomy with regard to ecosystems and their components should include careful consideration of the exercise of authority and the processes of decision-

making and enforcement. Consequently, it would be advisable that scholars remain circumspect about using the concept of autonomy in future research concerning the design principles.

In this line of thought, this research has contributed to the debate about the role of authority in the management of common pool resources, through the discussion about the relation between authority and decision-making/enforcement. This research has conceptualised them as core variables of territorial autonomy arrangements. The analysis made in this research provided information for the Colombian context regarding how different authorities exercise their powers under a territorial autonomy arrangement. Moreover, an analytical model was proposed, which could be used for the study of indigenous territorial autonomy in relation to ecosystems and their components in other *resguardos*.

The complexity of ecosystems and environmental impacts, as well as the outreach of indigenous territories beyond *resguardos,* constitute compelling arguments against arguments of local scales as '*inherently more liberatory or sustainable'* (Brown and Purcell 2005). Moreover, the findings about the contributions of indigenous territorial autonomy found for El Duya suggest that approaches like government-to-government (MPC 2015) and co-production of knowledge with Indigenous peoples (Johnson et al. 2016) could be explored to overcome the problems produced by jurisdictional encroachment. These approaches require of exploring ways to bridge the gap between naturalist and relational ontologies, for which concepts such as social-ecological system and relational autonomy (Ulloa Cubillos 2010) could be helpful.

Finally, some elements could not be addressed and remain to be investigated. Among these, the interplay between customary and novel authorities in *El Duya* could not be fully explored. This requires of ethnographic work in order to identify subtleties derived from the influence of customary institutions. Moreover, the impacts that the new institutional arrangement has had over the transformation of gender relationships, and over a possible redistribution of power constitutes a potential research topic.

Concerning *El Duya,* the question of the monitoring of ecosystems and their components requires further development, considering the trends described regarding the generation of environmental impacts. Therefore, more research about the ecosystems of El Duya is required, in order to assess the effects of environmental impacts produced by extractive activities. Furthermore, research about the state of biodiversity and water bodies could be used to create a monitoring system based on elements highlighted by interviewees: timber, waterflow; preys

and noise levels. A base line could be built based on the conditions prior to oil extraction activities, using a research approach that incorporates indigenous knowledge frameworks.

With regard to Colombian environmental regulations, a thorough analysis would require information about the deterrent effect of sanctions. Such effect could not be explored in this research and is necessary for designing future regulations in which indigenous authorities play a role. Similarly, possible convergences between environmental determinants, ecological main structure and indigenous sacred sites require further investigation, in order to identify how environmental planning could be more responsive to indigenous territorial claims. This could be addressed from a regional perspective, in which *resguardos* and sacred sites can be analysed in terms of their relations with elements identified in the environmental determinants. Therefore, it is necessary to identify conceptual convergencies between of environmental sustainability and indigenous concepts, such as *pervivencia*, in order to bridge the gap between indigenous and non-indigenous understandings in environmental planning. Moreover, the notion of 'respect for nature' appears to be more holistic than the concept of environmental sustainability, which is anthropocentric, because the idea of respect grants importance to all types of nature expressions, instead of restricting their value to their services to humans.

Finally, finding convergencies between indigenous and non-indigenous notions could provide a frame to propose novel territorial arrays and institutional arrangements, especially for the Colombian context. Moreover, these could contribute to interrogate the dominant conception of the State, which could result in the operationalisation of indigenous territories' transformation into subnational entities, the reconceptualization of *baldíos* and the active incorporation of indigenous authorities in the processes of State formation. This could foster creative solutions to the tensions emerging from the intersection of class, race, gender and geographical location problems in Latin American countries.

12 REFERENCES

Acosta Muñoz, Luis. 2016. *Los indicadores de bienestar humano: propuesta para el monitoreo de los modos de vida y territorios de los pueblos indígenas. Elementos y aportes para su definición y medición*. Leticia: Instituto Amazónico de Investigaciones Científicas, Sinchi.

African commission on human and peoples' rights (ACHPR). 2005. *Report of the African commission's working group of experts on indigenous populations/communities*. Copenhagen: ACHPR and IWGIA.

Agencia Nacional de Hidrocarburos Colombia (ANH). 2019. Mapa de Tierras. *Tierras_JULIO_080719.zip.Tierras_JULIO_080719*. Julio 8 de 2019. Database. http://www.anh.gov.co/Asignacion-de-areas/Paginas/Mapa-de-tierras.aspx

Agencia Nacional de Tierras (ANT). 2019. *Resguardos indígenas*. geoportal.agenciadetierras.gov.co. Datos Abiertos Agencia Nacional de Tierras. Database. https://data-agenciadetierras.opendata.arcgis.com/datasets/1a9fde11fc8f48f28388f7da49167e23_0

Agostino, Ana. 2007. Post-development Unveiling clues for a possible future. In: Ziai, Aram (Ed.). *Exploring Post-development Theory and practice, problems and perspectives*. London*:* Routledge. https://doi.org/10.4324/9780203962091

Agrawal, Arun and Gibson, Clark. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* 27, 4: 629-649. https://doi.org/10.1016/S0305-750X9800161-2

Agrawal, Arun. 1995. Dismantling the Divide between Indigenous and Scientific Knowledge. *Development and change* 26, 3: 413-439. https://doi.org/10.1111/j.1467-7660.1995.tb00560.x

Agrawal, Arun. 2002. Common Resources and Institutional Sustainability. National Research Council. *The Drama of the Commons*. Washington, DC: The National Academies Press. https://doi.org/10.17226/10287

Agrawal, Arun. 2003. Sustainable governance of common-pool resources: context, methods, and politics. *Annu. Rev. Anthropol* 32: 243-62. https://doi.org/10.1146/annurev.anthro.32.061002.093112

Albó, Xavier. 2012. Justicia indígena en la Bolivia plurinacional. In: Santos, Boaventura de Sousa and Exeni Rodríguez, José (Eds). *Justicia indígena, plurinacionalidad e interculturalidad en Bolivia*. La Paz: Fundación Rosa Luxemburg/Abya-Yala.

Alcorn, Janis. 1993. Indigenous peoples and Conservation. *Conservation Biology* 7: 424-426. https://doi.org/10.1046/j.1523-1739.1993.07020424.x

Álvarez Larraín, Aline and McCall, Michael. 2019. Participatory Mapping and Participatory Gis for Historical and Archaeological Landscape Studies: A Critical Review. *Journal of Archaeological Method and Theory* 26, 2: 643-78. https://doi.org/10.1007/s10816-018-9385-z

Anderies, Jhon; Janssen, Marco and Ostrom, Elinor. 2004. A framework to analyze the robustness of social-ecological systems from an institutional perspective. *Ecology and Society* 9. http://www.ecologyandsociety.org/vol9/iss1/art18/

Anderies, Jhon; Janssen, Marco and Schlager, Edella. 2016. Institutions and the performance of coupled infrastructure systems. *International Journal of the Commons* 10(2): 495-516. http://doi.org/10.18352/ijc.651

Anderson, Ian; Robson, Bridget; Connolly, Michele; Al-Yaman, Fadwa; Bjertness, Espen; King, Alexandra; Tynan, Michael; Madden, Richard; Bang, Abhay; Coimbra, Carlos; Pesantes, Maria; Amigo, Hugo; Andronov, Sergei; Armien, Blas; Ayala Obando, Daniel; Axelsson, Per; Bhatti, Zaid; Bhutta, Zulfiqar; Bjerregaard, Peter; Bjertness, Marius; Briceno-Leon, Roberto; Broderstad, Ann; Bustos, Patricia, Chongsuvivatwong, Virasakdi; Chu, Jiayou; Deji, Gouda, Jitendra; Harikumar, Rachakulla; Htay, Thein; Htet, Aung; Izugbara, Chimaraoke; Kamaka, Martina; King, Malcom; Kodavanti, Mallikharjuna Rao; Lara, Macarena; Laxmaiah, Avula; Lema, Claudia; Leon Taborda, Ana; Liabsuetrakul, Tippawan; Lobanov, Andrey; Melhus, Marita; Meshram, Indrapal; Miranda, Jaime; Mu, Thet; Nagalla, Balkrishna;, Nimmathota, Arlappa; Popov, Andrey; Peñuela Poveda, Ana; Ram, Faujdar, Reich, Hanna Santos, Ricardo; Sein, Aye; Shekhar, Chander; Sherpa, Lhamo;Y., Skold, Peter., Tano, Sofia., Tanywe, Asahngwa; Ugwu, Chidi; Ugwu, Fabian; Vapattanawong, Patama; Wan, Xia; Welch, James; Yang, Gonghuan; Yang, Zhaoqing and Yap, Leslie. 2016. Indigenous and tribal peoples' health. The Lancet; Lowitja Institute Global Collaboration: a population study. *The Lancet* 388, 10040: 131-157. http://dx.doi.org/10.1016/S0140-67361600345-7

Andrade Perez, Germán; Castro Gutiérrez, Luis; Durán Durán, Armando; Rodríguez Becerra; Rudas Lleras, Guillermo, Uribe Botero, Eduardo and Wills Herrera, Eduardo. 2009. *La mejor Orinoquia que podemos construir*. Bogotá: Universidad de Los Andes.

Anthias, Penelope and Radcliffe, Sarah. 2015. The ethno-environmental fix and its limits: Indigenous land titling and the production of not-quite-neoliberal natures in Bolivia. *Geoforum* 64. http://dx.doi.org/10.1016/j.geoforum.2013.06.007

Arévalo Peña, Martha. 2011. *Tensiones culturales en la estructuración del ordenamiento territorial a partir de la vivienda de interés social referido a comunidades indígenas. Caso: comunidad Salia, resguardo Duya*. Master thesis, Universidad nacional de Colombia, Bogotá, Colombia. http://bdigital.unal.edu.co/5250/1/MarthaLilianaAr%C3%A9valoPe%C3%B1a.2011.pdf

Ariza Ramírez, Alma and Baptiste Ballera, Luis. 2011. *Valoración integral de la biodiversidad de los ecosistemas y agroecosistemas de la sabana inundable y de la altillanura en la cuenca media del río meta, a escala*

1:100.000 zona Maní-Orocué-Carimagua. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. http://repository.humboldt.org.co/handle/20.500.11761/32964

Arteaga Aguilar, Marco; Ayala Arcipestre, María and Márquez, Ricardo. 2014. Ordenamiento Territorial Comunitario, Participación Social y Uso Del Suelo: Experiencias En El Sureste De México. *Perspectiva Geográfica* 19 2, 289-308. https://doi.org/10.19053/01233769.4100

Asher, Kiran and Ojeda, Diana. 2009. Producing Nature and Making the State: Ordenamiento Territorial in the Pacific Lowlands of Colombia. *Geoforum* 40, 3: 292-302. https://doi.org/10.1016/j.geoforum.2008.09.014

DNP, NYU Marion Institute of Urban Management. 2017. Atlas de expansión urbana Colombia. 2017. *Volumen 1: Áreas y densidades*. http://www.atlasexpansionurbanacolombia.org

Augsburger, Aaron and Haber, Paul. 2018. Visions in conflict: state hegemony versus plurinationality in the construction of indigenous autonomy in Bolivia. *Latin American and Caribbean Ethnic Studies* 13, 2: 135-156. https://doi.org/10.1080/17442222.2018.1440511

Autoridad Nacional de Licencias Ambientales (ANLA). 2017. *Protocolo de lineamientos y acciones para la participación de la ANLA en Procesos de consulta previa.* http://portal.anla.gov.co:93/sites/default/files/Comunicaciones/sgc/licenciamiento/protocolo_consulta_previa.pdf

Autoridad Nacional de Licencias Ambientales (ANLA) 2018a. *Resolución 00247 del 23 de febrero de 2018*.

Autoridad Nacional de Licencias Ambientales (ANLA). 2018b. *Resolución No. 02216 del 29 de noviembre de 2018*. http://portal.anla.gov.co/sites/default/files/res_2216_29112018_ct_1864_ct_3802.pdf

Aylwin, José. 2014a. Derechos políticos de los pueblos indígenas en América Latina - El impacto del Convenio 169. In: Aylwin, José and Tamburini, Leonardo (Eds). *Convenio 169 de la OIT: Los desafíos de su implementación en América Latina a 25 años de su aprobación*. Grupo Internacional de Trabajo sobre Asuntos Indígenas. https://www.iwgia.org/images/publications/0701_convenio169OIT2014.pdf

Aylwin, José. 2014b. Los derechos de los pueblos indígenas sobre la tierra y el territorio en América Latina y el Convenio 169. In: Aylwin, José and Tamburini, Leonardo. *Convenio 169 de la OIT: Los desafíos de su implementación en América Latina a 25 años de su aprobación*. Grupo Internacional de Trabajo sobre Asuntos Indígenas. https://www.iwgia.org/images/publications/0701_convenio169OIT2014.pdf

Aylwin, José. 2014c. Los derechos de los pueblos indígenas en América Latina: Avances jurídicos y brechas de implementación. In: Beltrão, Jane Felipe; Brito Filho, Jose Claudio Monteiro de; Gómez, Itziar; Pajares, Emilio; Paredes, Felipe; Zúñiga, Yanira Coords. *Derechos humanos de los grupos vulnerables.*

Manual. dhes. Red de Derechos Humanos y Educación Superior. https://www.upf.edu/dhes-alfa/materiales/docs/DHGV_Manual.pdf

Baena Carrillo, Samuel. 2015. La Autonomía de las Entidades Territoriales Indígenas. *Revista digital de derecho administrativo* 13: 99-133. https://doi.org/10.18601/21452946.n13.07.

Baggio, Jacopo; Barnett, Allain; Perez-Ibarra, Irene; Brady, Ute; Ratajczyk, Elicia; Rollins, Nathan; Rubiños, Cathy; Shin, Hoon; Yu, David; Aggarwal, Rimjhim; Anderies, John and Janssen, Marco. 2016. Explaining success and failure in the commons: the configural nature of Ostrom's institutional design principles. *International Journal of the Commons* 10, 2: 417-439. http://doi.org/10.18352/ijc.634

Balée, William and Erickson, Clark. 2006. Time, Complexity, and Historical Ecology. In: Balée, William and Erickson, Clark (Eds). *Time, Complexity, and Historical Ecology. Studies in the Neotropical Lowlands*. New York: Columbia University Press. https://www.sas.upenn.edu/~cerickso/from_ccat//fishweir/articles/Time&ComplexityInHistoricalEcologyIntro.pdf

Baptiste Ballera, Brigitte; Prada Pedreros, Saúl; Ariza Ramírez, Alma; Moncaleano Niño, Angela; Devia Castillo, Carlos; Repizo Guzmán, Augusto; Naranjo Arcila, Alejandra; Suarez Castillo, Diego; Correa, Diana. 2011. *Biodiversidad en las sabanas pluviales de Orocué, Casanare*. In: Usma Oviedo, José and Trujillo González, Fernando (Eds). Biodiversidad del Casanare: Ecosistemas Estratégicos del Departamento. Bogotá: Gobernación de Casanare - WWF Colombia. http://www.wwf.org.co/?uNewsID=202090

Barker, Joshua. 2012. The ethnographic interview in an age of globalization. In: Fardon, Richard; Harris, Olivia and Marchand, Trevor. *The SAGE handbook of social anthropology. 2*. London: SAGE Publications Ltd. http://dx.doi.org/10.4135/9781446201077.n39

Barnett, Allain and Anderies, John. 2014. Weak Feedbacks, Governance Mismatches, and the Robustness of Social-Ecological Systems: An Analysis of the Southwest Nova Scotia Lobster Fishery with Comparison to Maine. *Ecology and Society* 19, 4. http://dx.doi.org/10.5751/ES-06714-190439

Barry, Janice. 2012. Indigenous State Planning as inter-Institutional Capacity Development: the Evolution of "Government-to-Government" relations in Coastal British Columbia, Canada. *Planning Theory & Practice* 13, 2: 213-231.http://dx.doi.org/10.1080/14649357.2012.677122

Barsh, Russel. 1986. Indigenous peoples: An Emerging Object of International Law. *The American Journal of International Law* 80, 2: 369-385. http://www.jstor.org/stable/2201975

Basurto, Xavier. 2005. How Locally Designed Access and Use Controls Can Prevent the Tragedy of the Commons in a Mexican Small-Scale Fishing Community. *Society & Natural Resources* 18, 7: 643-59. https://doi.org/10.1080/08941920590959631

Becerra Becerra, Carmen. 2006. *La jurisdicción especial indígena y el derecho penal en Colombia: entre el pluralismo jurídico y la autonomía relativa*. Revista El otro Derecho 35. ILSA: 213-236. http://www.cejamericas.org/Documentos/DocumentosIDRC/93LajurisdiccionespecialindigenayelderechopenalenColombia.pdf

Behr, Timo and Jokela, Juha. 2011. *Regionalism & global governance: the emerging agenda*. Paris: Impr. Alpe. Notre Europe. https://institutdelors.eu/wp-content/uploads/2018/01/regionalism_globalgovernance_t.behrj.jokela_ne_july2011_01.pdf

Benedikter, Thomas. 2009. *The World's Modern Autonomy Systems. Concepts and experiences of Regional Territorial Autonomy*. Bolzano/Bozen: EURAC.

Bengoa Cabello, José. 2016. *La emergencia indígena en América Latina*. Chile: Fondo de Cultura Económica. Tercera edición.

Benson, Melinda. 2012. Mining Sacred Space: Law's Enactment of Competing Ontologies in the American West. *Environment and Planning A: Economy and Space 44,* 6: 1443-1458. https://doi.org/10.1068/a44579

Berke, Philip; Ericksen, Neil; Crawford, Jan and Dixon, Jenny. 2002. Planning and Indigenous People Human Rights and Environmental Protection in New Zealand. *Journal of Planning Education and Research* 22: 115-134. https://doi.org/10.1177/0739456X02238442

Berkes, Fikret. 2004. Rethinking Community-Based Conservation. *Conservation Biology* 18: 621-630. https://doi.org/10.1111/j.1523-1739.2004.00077.x

Berkes, Fikret. 2006. From community-based resource management to complex systems. *Ecology and Society* 11, 1. http://www.ecologyandsociety.org/vol11/iss1/art45/

Berkes, Fikret. 2009. Community conserved areas: policy issues in historic and contemporary context. *Conservation Letters* 2: 20-25. https://doi.org/10.1111/j.1755-263X.2008.00040.x

Berkes, Fikret; Colding, Johan and Folke, Carl. 2000. Rediscovery of Traditional Ecological Knowledge as Adaptive Management. *Ecological Applications* 10, 5. www.jstor.org/stable/2641280

Berman Arévalo, Eloisa and Ros-Tonen, Mirjam. 2009. Discourses, Power Negotiations and Indigenous Political Organisation in Forest Partnerships: The Case of Selva de Matavén, Colombia. *Human Ecology* 37, 6: 733-747. https://doi.org/10.1007/s10745-009-9272-z

Binder, Christina and Binder, Constanze. 2016. A capability perspective on indigenous autonomy. *Oxford Development Studies* 44, 3: 297-314. https://doi.org/10.1080/13600818.2016.1167178

Binder, Claudia; Hinkel, Jochen; Bots, Pieter and Pahl-Wostl, Claudia. 2013. Comparison of Frameworks for Analyzing Social-ecological Systems. *Ecology and Society* 18, 4. http://dx.doi.org/10.5751/ES-05551-180426

Bjork-James, Carwil. 2014. Hunting Indians: Globally Circulating Ideas and Frontier Practices in the Colombian Llanos. *Comparative Studies in Society and History* 57, 1: 98-129. http://dx.doi.org/10.1017/S0010417514000619

Blackman, Allen; Hoffmann, Sandra; Morgenstern, Richard and Topping, Elizabeth. 2005. *Assessment of Colombia's national environmental system SINA*. Washington: Resources for the Future. https://www.researchgate.net/profile/Allen_Blackman/publication/242532743_NATIONAL_ENVIRONMENTAL_SYSTEM_SINA/links/55ce565d08ae6a8813849e40/NATIONAL-ENVIRONMENTAL-SYSTEM-SINA.pdf

Blackman, Allen; Corral, Leonardo; Santos Lima, Eirivelthon; Asner, Gregory. 2017. *Proceedings of the National Academy of Sciences* 114, 16: http://dx.doi.org/4123-4128. 10.1073/pnas.1603290114

Bohórquez, Carmen. 2002. *Resguardos y Derechos Humanos. Procesos Históricos.* I, 2. Ed.ial Universidad de los Andes. http://www.redalyc.org/articulo.oa?id=20000203

Boiral, Oliver; Heras-Saizarbitoria, Iñaki; Brotherton, Marie-Christine. 2020. Improving environmental management through indigenous peoples' involvement. Environmental Science & Policy 103: 10-20. https://doi.org/10.1016/j.envsci.2019.10.006

Bonfil Batalla, Guillermo. 1972. El concepto de indio en América: una categoría de la situación colonial. *Anales de Antropología* 9: 105-124. http://www.revistas.unam.mx/index.php/antropologia/article/view/23077

Booth, Annie and Muir, Bruce. 2011. Environmental and Land-Use Planning Approaches of Indigenous Groups in Canada: An Overview. *Journal of Environmental Policy & Planning* 13, 4: 421-442. https://doi.org/10.1080/1523908X.2011.635881

Borrini-Feyerabend, Graziella et al. 2010. *Bio-cultural diversity conserved by Indigenous peoples and local communities- examples and analysis*. ICCA Consortium and Cenesta for GEF SGP, GTZ, IIED and IUCN/CEESP, Teheran.

Bremner, Jason and Lu, Flora. 2006. Common Property among Indigenous peoples of the Ecuadorian Amazon. *Conservation and Society* 4, 4: 499-521. http://www.conservationandsociety.org/text.asp?2006/4/4/499/49278

Broch, Katrin; Jepsen, Käthe and Leiva Jacquelin, Pamela (Eds) 2017. *The Indigenous World 2017*. Copenhagen: International Work Group for Indigenous Affairs (IWGIA). http://www.iwgia.org/iwgia_files_publications_files/0760_THE_INDIGENOUS_ORLD_2017_eb.pdf

Brosius, Peter; Tsing Lowenhaupt, Anna and Zerner, Charles. 1998. Representing Communities: Histories and Politics of Community-Based Natural Resource Management. *Society & Natural Resources* 11, 2: 157-68. https://doi.org/10.1080/08941929809381069

Brown, christopher and Purcell, Mark. 2005. There's nothing inherent about scale: political ecology, the local trap, and the politics of development in the Brazilian Amazon. *Geoforum* 36, 5: 607-624. https://doi.org/10.1016/j.geoforum.2004.09.001

Bryan, Jay. 2012. Rethinking Territory: Social Justice and Neoliberalism in Latin America's Territorial Turn. *Geography Compass* 6: 215-226. https://doi.org/10.1111/j.1749-8198.2012.00480.x

Burger, Julian. 2014. La protección de los pueblos indígenas en el sistema internacional. In: Beltrão, Jane Felipe; Brito Filho, Jose Claudio Monteiro de; Gómez, Itziar; Pajares, Emilio; Paredes, Felipe; Zúñiga, Yanira (Eds). *Derechos humanos de los grupos vulnerables. Manual.* dhes. Red de Derechos Humanos y Educación Superior. https://www.upf.edu/dhes-alfa/materiales/docs/DHGV_Manual.pdf

Burguete Cal y Mayor, Araceli. 2010. Autonomía: la emergencia de un nuevo paradigma en las luchas por la descolonización en América Latina. In: González, Miguel; Burguete Cal y Mayor, Araceli and Ortiz, Pablo (Eds). *La autonomía a debate: autogobierno indígena y Estado plurinacional en América Latina.* Quito: FLACSO, GTZ, (IWGIA), Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS), Universidad Intercultural de Chiapas (UNICH). http://www.flacsoandes.edu.ec/libros/digital/55881.pdf

Calle Alzate, Laura. 2017. Entre La Violencia, la colonización y la adjudicación de reservas. Relatos sikuanis sobre el abandono, el despojo y la recuperación del territorio. *Revista Colombiana de Antropología* 53, 1: 91-122.

Canal Albán, Francisco and Rodríguez Becerra, Manuel. 2008. Las corporaciones autónomas regionales, quince años después de la creación del SINA. In: Rodríguez Becerra, Manuel (Ed.). *Gobernabilidad, instituciones y medio ambiente en Colombia.* Bogotá: Foro Nacional Ambiental. http://www.foronacionalambiental.org.co/wp-content/uploads/2011/11/Libro-medio-ambiente.pdf

Caro-Caro, Clara; Benavides-Ladino, Gustavo; Torres-Mora, Marco; Parada-Guevara, Sandra. 2016. *Visión de Visiones del Desarrollo Sostenible de los Llanos Orientales. Las Voces de los Territorios.* Convenio de Cooperación Ecopetrol-Unillanos N° 5211714 AC 02. Instituto de Ciencias Ambientales de la *Orinoquia* Colombiana. Unillanos. https://ceo.uniandes.edu.co/images/LIbro_vision.pdf

Casal, Antonio, Merchán Fornelino, Manuel; Garcés Restrepo, Mario, Cárdenas Torres, Miguel and Gómez Velasco, Fernando. 2013. Uso histórico y actual del caimán llanero *Crocodylus intermedius* en la *Orinoquia* Colombia-Venezuela. *Biota Colombiana* 14, 1: 65-82. http://www.redalyc.org/articulo.oa?id=49128077006

Caulín Martínez, Antonio. 1779. Segunda distancia del Orinoco. In: Caulin Martínez, Antonio. *Historia coro-graphica natural y evangelica de la nueva Andalucia provincias de Cumaná, Guayana y vertientes del rio Orinoco; Provincias de Cumaná, Guyana y Vertientes del Río Orinoco.* Biblioteca de la Abadía de Montserrat.

Digitalised. https://books.google.de/books?id=3U2UgK2GY50C&printsec=frontcover&hl=es&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Cayón Durán, Luis and Turbay Ceballos, Sandra. 2005. Discurso Chamánico, Ordenamiento Territorial y Áreas Protegidas en la Amazonía Colombiana. *Journal of Latin American Anthropology* 10: 88-125. https://doi.org/10.1525/jlca.2005.10.1.88

Cayón Durán, Luis. 2010. Descubriendo la naturaleza. Derecho natural y ordenamiento territorial indígena en la Amazonia colombiana. *Anuário Antropológico*. https://doi.org/10.4000/aa.830

Centro Nacional de Memoria Histórica (CNMH). 2015. *Rearmados y reintegrados. Panorama posacuerdos con las AUC*. Bogotá.

Chapin, Mac; Lamb, Zachary and Threldeld, Bill. 2005. Mapping indigenous lands. *Annual review of Anthropology* 34: 619-638. https://doi.org/10.1146/annurev.anthro.34.081804.120429

Chhatre, Ashwini and Agrawal, Arun. 2009a. Trade-offs and synergies between carbon storage and livelihood benefits from forest commons. *Proceedings of the National Academy of Sciences* 106, 42: 17667-17670. https://doi.org/10.1073/pnas.0905308106

Chhatre, Ashwini and Agrawal, Arun. 2009b. *Supporting Information*. https://doi.org/10.1073/pnas.0905308106

Chirif, Alberto. 2015. *Estudio regional "Comparación de la normativa sobre los territorios indígenas y de su implementación". Bolivia, Colombia, Ecuador, Perú y Paraguay*. Quito: GIZ. https://biblio.flacsoandes.edu.ec/libros/digital/57787.pdf

Christen, Marius and Schmidt, Stephan. 2012. A Formal Framework for Conceptions of Sustainability: a Theoretical Contribution to the Discourse in Sustainable Development. *Sustainable Development* 20: 400-410. https://doi.org/10.1002/sd.518

CIAT and Cormacarena. 2017. *Plan regional Integral de Cambio climático para la Orinoquía*. CIAT publicación N° 438. Centro internacional de agricultura tropical (CIAT). https://www.researchgate.net/publication/330881683_Libro_Regional_Plan_Integral_de_Cambio_Climatico_para_la_*Orinoquia*_PRICCO/link/5c5997d2299bf1d14cadb6ad/download

CIAT, Cormacarena, Corporinoquia, ECOPETROL. 2018. *Plan Regional Integral de Cambio Climático para la Orinoquía - Casanare, Resumen Ejecutivo*. CIAT publicación No. 459. Centro internacional de agricultura tropical (CIAT). http://www.cormacarena.gov.co/descargarpdf.php?libro=7422

Colchester, Marcus and Whitmore, 2017. Free, prior and informed consent: how to rectify the devastating consequences of harmful mining for indigenous peoples. *Perspectives in Ecology and Conservation* 15: 152 – 160. https://doi.org/10.1016/j.pecon.2017.05.007

Comandulli, Carolina. 2016. Gestão territorial e ambiental de terras indígenas. Fazendo planos. *Ruris* 10, 1: 41-71. https://www.ifch.unicamp.br/ojs/index.php/ruris/article/view/2634

Comisión de Ordenamiento Territorial (COT). 2016. *Acuerdo Nro. 010 de 2016*. https://colaboracion.dnp.gov.co/CDT/Desarrollo%20Territorial/COT%20parte%201/Acuerdo%20No.%20010%20%20POD.pdf?Web

Comisión Económica para América Latina y el Caribe (CEPAL). 2014. *Los pueblos indígenas en América Latina. Avances en el último decenio y retos pendientes para la garantía de sus derechos*. Del Popolo, Fabiana and Jaspers, Dirk Coords. CEPAL. Naciones Unidas, Santiago de Chile. 408 p. http://repositorio.cepal.org/bitstream/handle/11362/37222/S1420521_es.pdf?sequence=1

Comisión Histórica del Conflicto y sus Víctimas (CHCV). 2015. *Contribución al entendimiento del conflicto armado en Colombia*. Informe especial.

CONPAZ. 2014. Propuesta de CONPAZ Comisión de la Verdad. Al presidente Juan Manuel Santos, a la sociedad y a las guerrillas de las FARC, ELN y EPL. Comisión Intereclesial de Justicia y Paz. https://issuu.com/comisionjusticiaypaz/docs/comision_de_la_verdad_-_conpaz

Contraloría General de la República (CGR). 2014. Acumulación irregular de predios baldíos en la altillanura colombiana. Informe de actuación especial. Bogotá: CGR. https://www.contraloria.gov.co/documents/20181/703164/Inf_Baldios_pub2017.pdf/fc83b206-c806-414e-a253-6bf355b01ccf

Contraloría General de la República (CGR). 2017. El proceso administrativo de licenciamiento ambiental en Colombia. https://www.contraloria.gov.co/documents/20181/465175/El+proceso+administrativo+de+licenciamiento+ambiental+en+Colombia+2017.pdf

Coombes, Brad; Johnson, Jay and Howitt, Richard. 2012. Indigenous geographies I: Mere resource conflicts? The complexities in Indigenous land and environmental claims. *Progress in Human Geography* 36, 6. https://doi.org/10.1177/0309132511431410

Cornell, Svante. 2002. Autonomy as a Source of Conflict: Caucasian Conflicts in Theoretical Perspective. *World Politics* 54, 2: 245-76. http://www.jstor.org/stable/25054184

Corporación autónoma regional de la Orinoquia (Corporinoqia).2016. *Plan de acción 2016 – 2019*. http://www.corporinoquia.gov.co/files/plan_de_accion_2016_2019/Plan_Accion_aprobado.pdf

Corporación autónoma regional de la Orinoquia (Corporinoqia).2017. *Resolución 300.41.17.2193. por la cual se establecen las determinantes ambientales y se deroga la resolución no. 300.41.13.0191 del 27 de febrero de 2013*. https://www.scribd.com/document/434492988/resolucion-de-determinantes

Corporación autónoma regional de la Orinoquia (Corporinoqia).2018. *Concepto técnico 500.8.2-18-2355*. Atención a queja por la presunta intervención de una fuente hídrica en la construcción de la locación petrolera vikingo 1. Yopal: unpublished.

Correa Rubio, Francois and Acero Pulgarin, Sandra. 2013. Proyecciones del Instituto Indigenista de Colombia en la División de Asuntos Indígenas. *Baukara Bitácoras de antropología e historia de la antropología en América Latina* 3. http://www.interindi.net/es/archivos/Baukara3_10_CorreaAcero.pdf

Correa Rubio, Francois. 2008. *Desencializando lo "Indígena" en las Categorías Jurídicas del Estado Colombiano*. In: Cátedra Manuel Ancízar. Bogotá: Universidad Nacional de Colombia. http://www.docentes.unal.edu.co/grnemogas/docs/11_Correa_tr.pdf

Correa, Hernán; Ruiz, Sandra y Arévalo, Luz (Eds). 2005. *Plan de acción en biodiversidad de la cuenca del Orinoco- Colombia / 2005-2015*. Propuesta Técnica. Bogotá: Corporinoquia, Cormacarena, I.A.v.H, Unitrópico, Fundación Omacha, Fundación Horizonte Verde, Universidad Javeriana, Unillanos, WWF-Colombia, GTZ-Colombia.

Corte Constitucional de Colombia (CCC). 2009. *Auto 004 de 2009*. Magistrado Manuel José Cepeda Espinosa: January 26. http://www.corteconstitucional.gov.co/relatoria/autos/2009/a004-09.htm

Corte Constitucional de Colombia (CCC). 2010. *Sentencia C-598 de 2010*. Magistrado Mauricio González Cuervo: July 27. http://www.corteconstitucional.gov.co/relatoria/2010/C-598-10.htm

Corte Constitucional de Colombia (CCC). 2012. *Sentencia T-236 de 2012*. Magistrado Humberto Antonio Sierra Porto: March 22. https://www.corteconstitucional.gov.co/relatoria/2012/T-236-12.htm

Corte constitucional de Colombia (CCC). 2015. *Sentencia C-617 de 2015*. Magistrado Mauricio González Cuervo. September 30. https://www.corteconstitucional.gov.co/relatoria/2015/C-617-15.htm

Corte constitucional de Colombia (CCC). 2016a. *Sentencia C-389 de 2016*. Magistrada María Victoria Calle Correa: July 27. http://www.corteconstitucional.gov.co/relatoria/2016/C-389-16.htm

Corte constitucional de Colombia (CCC). 2016b. *Sentencia T-704 de 2016*. Magistrado Luis Ernesto Vargas Silva: December 12. http://www.corteconstitucional.gov.co/relatoria/2016/t-704-16.htm

Cox, Michael, Villamayor-Tomas, Sergio, Epstein, Graham, Evans, Louisa, Ban, Natalie, Fleischman, Forrest and Garcia-Lopez, Gustavo. 2016. Synthesizing theories of natural resource management and governance. *Global Environmental Change* 39, 45-56. https://doi.org/10.1016/j.gloenvcha.2016.04.011

Cox, Michael; Arnold, Gwen and Villamayor-Tomas, Sergio. 2010. A review of design principles for community-based natural resource management. *Ecology and Society* 15, 4. http://www.ecologyandsociety.org/vol15/iss4/art38/

Crawford, Sue and Ostrom, Elinor. 2005. A Grammar of Institutions. In: Ostrom, Elinor. *Understanding Institutional Diversity*. Princeton University Press. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/slub/detail.action?docID=483578.

Creswell, John. 2014. Research design: qualitative, quantitative, and mixed methods approaches. 4th edition. SAGE Publications, Inc.

Daes, Erica. 2001. *Indigenous peoples and their relationship to land.* Final working paper. E/CN.4/Sub.2/2001/21. Commission on Human Rights. Sub-Commission on the Promotion and Protection of Human Rights.

Daly, Herman. 2007. *Ecological Economics and Sustainable Development, Selected Essays of Herman Daly.* Advances in Ecological Economics. Edward Elgar Publishing Limited.

Davidson-Hunt, Iain; Turner, Katherine; Te Pareake Mead, Aroha; Cabrera-Lopez, Juanita; Bolton, Richard; Idrobo, Julián; Miretski, Inna; Morrison, Alli and Robson, James. 2012. Biocultural Design: A New Conceptual Framework for Sustainable Development in Rural Indigenous and Local Communities. *S.A.P.I.EN.S.* 5, 2. http://sapiens.revues.org/1382

Davis, Shelton and Wali, Alaka. 1993. *Indigenous territories and tropical forest management in Latin America. Working papers.* The World Bank. http://documents.worldbank.org/curated/en/965511468770479500/Indigenous-territories-and-tropical-forest-management-in-Latin-America

De La Cadena, Marisol. 2010. Indigenous cosmopolitics in the Andes: conceptual reflections beyond Politics. *Cultural Anthropology* 25, 2: 334-370.

DeFries, Ruth; Ellis, Erle; Chapin, Stuart; Matson, Pamela; Turner, BL; Agrawal, Arun; Crutzen, Paul; Field, Chris; G leick, Peter; Kareiva, Peter; Lambin, Eric; Liverman, Diana; Ostrom, Elinor; Sanchez, Pedro; Syvitski, James. 2012. Planetary Opportunities: A Social Contract for Global Change Science to Contribute to a Sustainable Future. *BioScience* 62, 6: 603-606. https://doi.org/10.1525/bio.2012.62.6.11

Deichmann, Jessica; Hernández-Serna, Andrés; Delgado, Amanda; Campos-Cerqueira, Marconi and Aide, Mitchell. 2017. Soundscape analysis and acoustic monitoring document impacts of natural gas exploration on biodiversity in a tropical forest. *Ecological Indicators* 74: 39-48. https://doi.org/10.1016/j.ecolind.2016.11.002

Del Popolo, Fabiana; Oyarce, Ana; Ribotta, Bruno; Rodríguez, Jorge. 2007. Indigenous peoples and urban settlements: spatial distribution, internal migration and living conditions. *Serie Población y*

desarrollo 78. Santiago: CELADE. United Nations. http://repositorio.cepal.org/bitstream/handle/11362/7219/1/S0700810_en.pdf

DeMarrais, Kathleen. 2004. Qualitative Interview Studies: Learning Through Experience. In: DeMarrais, Kathleen and Lapan, Stephen. *Foundations for Research. Methods of Inquiry in Education and the Social Sciences.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers. ftp://ftp.istt.ir/Download/ISTT/Amozesh/r&d/Books/Foundations%20for%20Research.pdf

Departamento Administrativo Nacional de Estadística (DANE). 2014a. Tercer Censo Nacional Agropecuario. Tomo 2. Resultados.

Departamento Administrativo Nacional de Estadística (DANE). 2014b. *COLOMBIA - Tercer Censo Nacional Agropecuario - 2014 -3er CNA. Casanare.* DANE-DCD-CNA-2014. Database. :http://microdatos.dane.gov.co/index.php/catalog/513/get_microdata

Departamento Nacional de Planeación (DNP). 2014. *Política para el desarrollo integral de la Orinoquia: altillanura - Fase I.* https://ceo.uniandes.edu.co/images/Documentos/Conpes%20Altillanura%202014.pdf

Departamento Nacional de Planeación (DNP). 2015. Plan Nacional de Desarrollo 2014-2018.

Departamento Nacional de Planeación (DNP). 2019a. *Pacto por Colombia, pacto por la equidad.* https://colaboracion.dnp.gov.co/CDT/Prensa/PND-Pacto-por-Colombia-pacto-por-la-equidad-2018-2022.pdf

Departamento nacional de Planeación (DNP). 2019b. *Reportes SGP. Ficha comparativa de distribución y variables por entidad territorial. Orocué.* https://sicodis.dnp.gov.co/ReportesSGP/ReporteComparativo.aspx

Descola, Philippe. 2004. Las cosmologías indígenas de la Amazonia. In: Surrallés, Alexandre and García Hierro, Pedro. *Tierra Adentro. Territorio indígena y percepción del entorno.* Skive, Denmark: International work group for indigenous affairs (IWGIA). https://www.iwgia.org/images/publications//0331_tierra_adentro.pdf

Deskaheh. 1923. *The redman's appeal for justice.* Six Nations. http://cendoc.docip.org/collect/deskaheh/index/assoc/HASH0102/5e23c4be.dir/R612-11-28075-30626-8.pdf

Díaz, Sandra; Pascual, Unai; Stenseke, Marie; Martín-López, Berta; Watson, Robert; Molnár, Zsolt; Hill, Rosemary; Chan, Kai; Baste, Ivar; Brauman, Kate; Polasky, Stephen; Church, Andrew; Lonsdale, Mark; Larigauderie, Anne; Leadley, Paul; van Oudenhoven, Alexander; van der Plaat, Felice; Schröter, Matthias; Lavorel, Sandra; Aumeeruddy-Thomas, Yildiz; Bukvareva, Elena; Davies, Kirsten; Demissew, Sebsebe; Erpul, Gunay; Failler, Pierre; Guerra, Carlos; Hewitt, Chad; Keune,

Hans; Lindley, Sarah and Shirayama, Yoshihisa. 2018. Assessing nature's contributions to people. *Science* 359, 6373: 270-272. https://doi.org/10.1126/science.aap8826

Dobson, Andrew. 1996. Environment sustainabilities: An analysis and a typology. *Environmental Politics* 5, 3: 401-428. https://doi.org/10.1080/09644019608414280

Domínguez Ossa, Camilo. 1994. Procesos y conflictos en la estructuración territorial de Casanare. *Cuadernos de Geografía: Revista Colombiana de Geografía* 5, 1: 99-112. https://revistas.unal.edu.co/index.php/rcg/article/view/70730

Du Pisani, Jacobus. 2006. Sustainable development - Historical roots of the concept. *Environmental Sciences* 3, 2: 83-96. http://dx.doi.org/10.1080/15693430600688831

Duarte Torres, Carlos. 2015. Los macromodelos de la gobernanza indígena colombiana: un análisis socioespacial a los conflictos territoriales del multiculturalismo operativo colombiano. *Maguaré* 29, 1: 181-234. https://revistas.unal.edu.co/index.php/maguare/article/view/57237

Duarte Torres, Carlos. 2016. *Desencuentros territoriales: Caracterización de los conflictos en las regiones de la Altillanura, Putumayo y Montes de María*. Bogotá: Instituto Colombiano de Antropología e Historia.

Due Process of Law Foundation (DPLF). 2015. *Right to Free, Prior, and Informed Consultation and Consent in Latin America. Progress and challenges in Bolivia, Brazil, Chile, Colombia, Guatemala, and Peru.*

Echeverri Restrepo, Juan. 2000. Reflexiones sobre el concepto de territorio y ordenamiento territorial indígena. In: Vieco Albarracín, Juan; Franky, Carlos; Echeverri, Juan (Eds) 2000. *Simposio [sobre] Territorialidad Indígena y Ordenamiento en la Amazonia. Territorialidad indígena y ordenamiento en la Amazonia: memorias*. Bogotá: Universidad Nacional de Colombia, UNIBIBLOS. http://bdigital.unal.edu.co/10064/6/9588051851.pdf

Echeverri Restrepo, Juan. 2001. La naturaleza es bagazo y la humanidad almidón: visión del medio natural desde los grupos que consumen ambil de tabaco. *Boletín de Antropología* 15, (32): 13-30. Universidad de Antioquia.

Economic Commission for Latin America and the Caribbean (ECLAC). 2014. *Guaranteeing Indigenous peoples' rights in Latin America. Progress in the past decade and remaining challenges*. Summary. Santiago: ECLAC.

Economic Commission for Latin America and the Caribbean (ECLAC). 2019. *Planning for sustainable territorial development in Latin America and the Caribbean.* (LC/CRP.17/3), Santiago: ECLAC. https://repositorio.cepal.org/bitstream/handle/11362/44732/1/S1900438_en.pdf

Eide, Asbjørn. 2015. From Prevention of discrimination to autonomy and self-determination: the start of the WGIP, achievements gained and Future challenges. In: Dunbar-ortiz, Roxanne; Sambo dorough, dalee; alfredson gudmundur; Swepston, lee and Petter Wille (Eds). *Indigenous peoples' Rights*

in International law: emergence and application. Copenhagen: International work group for indigenous affairs.https://www.iwgia.org/images/publications/0709_INDIGENOUS_PEOPLES_RIGHTS_2.pdf

Engle, Karen. 2011. On Fragile Architecture: The UN Declaration on the Rights of Indigenous peoples in the Context of Human Rights. *The European Journal of International Law* 22 no. 1: 141-163. http://dx.doi.org/10.1093/ejil/chr019

Erazo, Juliet. 2013. *Governing indigenous territories. Enacting sovereignty in the Ecuadorian amazon*. United States of America: Duke University Press.

Erlandson, Jon and Rick, Torben. 2009. Archaeology, marine ecology, and human impacts on marine environments. In: Rick, Torben and Erlandson, Jon (Eds). *Human impacts on ancient marine ecosystems: a global perspective*. Berkeley: University of California Press. https://content.ucpress.edu/chapters/10585.ch01.pdf

Escobar Ohmstede, Antonio. 2014. Instituições e trabalho indígena na América espanhola. *Mundos do Trabalho* 6, n. 12: 27-53. http://dx.doi.org/10.5007/1984-9222.2014v6n12p27

Escobar, Arturo. 1995. *Encountering development: the making and unmaking of the third world*. New Jersey: Princeton University Press.

Escobar, Arturo. 2015. Territorios de diferencia: la ontología política de los "derechos al territorio". *Cuadernos de antropología social* 41: 25-38. http://www.scielo.org.ar/scielo.php?script=sci_arttext&pid=S1850-275X2015000100002&lng=es&tlng=es

Escobar, Arturo. 2016. Thinking-feeling with the Earth: Territorial Struggles and the Ontological Dimension of the Epistemologies of the South. *Revista de Antropología Iberoamericana* 11, 1: 11-32.

Estrada Ramírez, Hortensia. 2011. *Préstamos del español y de otros idiomas en la lengua sáliba*. Lenguas en contacto y bilingüismo. *Revista digital* 2: 12-55. http://bibliotecadigital.caroycuervo.gov.co/183/1/01_Hortensia_Estrada_Ramirez_0.pdf

Estrada Ramírez, Hortensia. 2014a. El Sistema de Clases Nominales en la lengua Saliba. *Revista brasileira de Lingüística antropológica* 6, 1: 137-164. https://doi.org/10.26512/rbla.v6i1.21062

Estrada Ramírez, Hortensia. 2014b. Introducción. In: Pueblo Salia and Estrada Ramírez, Hortensia. *Diccionario electrónico Sáliba - Español: una herramienta interactiva para la documentación de la lengua y la cultura Sáliba*.http://saliba.caroycuervo.gov.co/index.php/Introducci%C3%B3n#Datos_etnogr.C3.A1ficos

Etter, Andres; McAlpine, Clive and Possingham, Hugh. 2008. Historical Patterns and Drivers of Landscape Change in Colombia since 1500: a Regionalized Spatial Approach. *Annals of the Association of American Geographers* 98, 1: 2-23. https://doi.org/10.1080/00045600701733911

Fajardo Becerra, Hernán. 2008. José Luis Merizalde Cisneros. In: Fajardo Becerra, Hernán and Gutiérrez, Manuel (Eds). *Reseña histórica de Casanare*. Bogotá: Fondo mixto de Casanare.

Falleti, Tulia. 2005. A Sequential Theory of Decentralization: Latin American Cases in comparative Perspective. *American Political Science Review* 99, 3: 327-346. https://doi.org/10.1017/S0003055405051695

Fals Borda, Orlando. 2000. El ordenamiento territorial: perspectivas después de la Constitución de 1991. In: *Territorialidad indígena y ordenamiento en la Amazonía*. Vieco Albarracín; Franky, Carlos y Echeverri, Juan (Eds). 235-249. Bogotá: Universidad Nacional de Colombia sede Leticia, IMANI y Programa COAMA.

Fay, Derick. 2008. "*Traditional authorities" and authority over land in South Africa*. In: Paper presented at Conference of the International Association for the Study of the Commons (IASC), Cheltenham, England, 14-18 July.

Fedemaderas. 2011. Acuerdo sectorial de competitividad para la cadena forestal de la *Orinoquia* madera, tableros, muebles y prductos de maderara, primera actualización. FAO Fedemaderas, Ministerio de Agricultura. http://fedemaderas.org.co/wp-content/uploads/2012/04/3ASC_*ORINOQUIA*_FINAL_2011-14-05.pdf

Fergusson, Leopoldo. 2019. Who wants violence? The political economy of conflict and state building in Colombia. *Cuadernos de Economía 38,* 78: 671-700.

Field diary. Diana Alejandra Jiménez Montoya. 2018. Unpublished.

Finley-Brook, Mary and Offen, Karl. 2009. Bounding the Commons: Land demarcation in northeastern Nicaragua. *Bulletin of Latin American Research* 28, 3: 343-363.

Finley-Brook, Mary. 2013. We are the owners: autonomy and natural resources in northeastern Nicaragua. In: Baracco, Luciano ed. *National integration and contested autonomy. The Caribbean coast of Nicaragua*. New York: Algora.

Finley-Brook, Mary. 2016. Territorial 'Fix'? Tenure Insecurity in Titled Indigenous Territories. *Bulletin of Latin American Research* 35. http://doi.org/10.1111/blar.12489

Flyvbjerg, Bent. 2011. Case Study. In: Denzin, Norman and Lincoln, Yvonna (Eds). *The Sage Handbook of Qualitative Research*, 4th Edition. Thousand Oaks, CA: Sage. https://www.academia.edu/3271072/Case_Study.

Fox, Donald and Stetson, Anne 1992. The 1991 Constitutional Reform: Prospects for Democracy and the Rule of Law in Colombia. *24 Case W. Res. J. Int'l L.* 139. http://scholarlycommons.law.case.edu/jil/vol24/iss2/1

Franco García, Roberto. 1997. *Historia de Orocué*. Bogotá: Kelt Colombia/Ecopetrol.

Franky Calvo, Carlos and Mahecha Rubio, Dany. 2000. La territorialidad entre lospueblos de tradición nómada del noroeste amazónico colombiano. In: *Territorialidad indígena y ordenamiento en la Amazonía*. Vieco Albarracín; Franky, Carlos y Echeverri, Juan (Eds). 235-249. Bogotá: Universidad Nacional de Colombia sede Leticia, IMANI y Programa COAMA.

Franky Calvo, Carlos. 2001. Ordenamiento territorial indígena amazónico: aportes desde la diversidad al Estado-Nación colombiano. In: Franky, Carlos y C. Zárate Ed.es. *Imani Mundo: estudios en la Amazonía colombiana*. Bogotá: Universidad Nacional de Colombia. http://www.bdigital.unal.edu.co/3740/2810/ordenamientoterritorialindigenaamazonico.pdf

Friedmann, John and Kuester, Caroline. 1994. Planning Education for the Late Twentieth Century: An Initial Inquiry. *Journal of Planning Education and Research* 14, 1: 55-64. https://doi.org/10.1177/0739456x9401400106

Fundación Centro de Cooperación al Indígena (CECOIN). 1998. Recuperación y fortalecimiento de la actividad artesanal en las comunidades indígenas saliva de Orocué, Casanare. Informe final. Convenio Artesanias de Colombia -Cecoin-Cas-001. https://repositorio.artesaniasdecolombia.com.co/bitstream/001/1276/5/D1199850.pdf

Gadgil, Madhav, Fikret Berkes, and Carl Folke. 1993. Indigenous Knowledge for Biodiversity Conservation. *Ambio* 22, 2/3: 151-56. http://www.jstor.org/stable/4314060

Gallopin, Gilberto. 2001. *Science and technology, sustainability and sustainable development* ECLAC. LC/R.2081.
http://repositorio.cepal.org/bitstream/handle/11362/31809/S02157.pdf?sequence=1

Garcés Velásquez, Fernando. 2011. The Domestication of Indigenous Autonomies in Bolivia: From the Pact of Unity to the New Constitution. In: Nicole Fabricant and Bret Gustafson ed. *Remapping Bolivia: Resources, Territory, and Indigeneity in a Plurinational State*. Santa Fe, NM: School for Advanced Research.

García Bustamante, Miguel. 2003. Persistencia y cambio en la frontera oriental de Colombia: el piedemonte del Meta, 1840-1950. Cali: Universidad EAFIT.

García Hierro, Pedro. 2004. Territorios indígenas: tocando a las puertas del Derecho. In: Surrallés, Alexandre and García Hierro, Pedro. *Tierra Adentro. Territorio indígena y percepción del entorno*. Skive, Denmark: International work group for indigenous affairs (IWGIA). https://www.iwgia.org/images/publications//0331_tierra_adentro.pdf

García Jimeno, Camilo. 2008. Conflicto, sociedad y estado colonial en el resguardo de Chiquiza, 1756-1801. Bogotá: Uniandes.

García Lozano, Luisa. 2013. La reconstrucción del espejo: 1969. ¿El indígena como persona? *Revista Prolegómenos. Derechos y Valores* 16, 31: 87-97. https://doi.org/10.18359/dere.721

Garnett, Stephen; Burgess, Neil; Fa, John; Fernández-Llamazares, Álvaro; Molnár, Zsolt; Robinson, Cathy; Watson, James; Zander, Kerstin; Austin, Beau; Brondízio, Eduardo; French Collier, Neil; Duncan, Tom; Ellis, Erle; Geyle, Hayley; V. Jackson, Micha; Jonas, Harry; Malmer, Pernilla; McGowan, Ben; Sivongxay, Amphone; Leiper, Ian. 2018. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability* 1: 369-374. https://doi.org/10.1038/s41893-018-0100-6

Garzón Rodríguez, Andrea; Romualdo Lara, Elizabeth and Rodríguez Riveros, Blanca. 2011. *Los Saliba de Orocué: costumbres y tradiciones*. Instituto de las Artes y la Cultura de Orocué (INARCO).

Gebara, Maria. 2018. Tenure reforms in indigenous lands: decentralized forest management or illegalism? *Current Opinion in Environmental Sustainability* 32: 60-67. https://doi.org/10.1016/j.cosust.2018.04.008

Ghai, Yash. 2000. Ethnicity and autonomy: A framework for analysis. In: Ghai, Yash (Ed.). *Autonomy and ethnicity: Negotiating competing claims in multi-ethnic states*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511560088

Ghai, Yash. 2013. Introduction: Nature and origins of autonomy. In: Ghai, Yash and Woodman, Sophia ed. *Practising Self-Government: A Comparative Study of Autonomous Regions*. http://assets.cambridge.org/97811070/18587/excerpt/9781107018587_excerpt.pdf

Ghate, Rucha. 2000. *The Role of Autonomy in Self-Organizing Process: A Case Study of Local Forest Management in India*. Working Paper. Workshop in Political Theory and Policy Analysis, Indiana University, Bloomington.

Garavito-Fonseca, Julieta; Suárez, Cesar; Bravo, Andres; Vargas, Rafael; Cuadros, Leidy; Córdoba, Mireya; Miranda, Laura; Martínez; Jenny; Usma, José. In: Usma Oviedo, José and Trujillo González, Fernando (Eds). 2011. Biodiversidad del Casanare: Ecosistemas Estratégicos del Departamento. Bogotá: Gobernación de Casanare (WWF). http://www.wwf.org.co/?uNewsID=202090

Gillard, Michael. 2018. *Peak death: Murder for Hire in the Oil Fields of Colombia*. newmatilda.com. January 22. https://newmatilda.com/2018/01/22/peak-death-murder-hire-oil-fields-columbia/

Gilroy, James; Prescott, Graham; Cardenas, Johann, Castañeda, Pamela; Sánchez, Andrés; Rojas-Murcia, Luis; Medina Uribe, Claudia; Haugaasen, Torbjørn and Edwards, David. 2015. Minimizing the biodiversity impact of Neotropical oil palm development. *Global Change Biology* 21: 1531-1540. https://doi.org/10.1111/gcb.12696

Gómez Buendía, Hernando. 2004. El municipio de la "otra Colombia": Papeles, problemas, posibilidades. Relatoría de un diálogo ciudadano. *Revista Opera* 4, 4: 7-35. http://www.redalyc.org/articulo.oa?id=67540402

Gómez López, Augusto. 1989. Llanos orientales: colonización y conflictos interétnicos, 1870-1970. *Boletín americanista* 39-40: 79-105. https://dialnet.unirioja.es/servlet/articulo?codigo=2937671

Gómez López, Augusto; Molina Gómez, Nathaly and Suárez Pérez, Carolina. 2012. Vichada: éxodo y etnocidio indígena; el avance de la ganadería extensiva y de la colonización. *Maguaré* 26, 1: 2256-5752. https://revistas.unal.edu.co/index.php/maguare/article/view/35263

Gómez Valencia, Herinaldy. 2015. *Justicias indígenas de Colombia: reflexiones para un debate cultural, jurídico y político. Pueblos Kogui, Arhuaco, Wiwa, Kankuamo, Nasa, Misak, Yanacona y Camëntšá.* Bogotá: Consejo superior de la judicatura. https://www.ramajudicial.gov.co/documents/4263275/0/LibroJusticiasIndigenas.pdf/e932af27-6ca8-462a-8f79-73cd14168426

Gonzales, Tirso and González, Miguel. 2015. Introduction: Indigenous peoples and autonomy in Latin America. *Latin American and Caribbean Ethnic Studies* 1, 1: 1-9. https://doi.org/10.1080/17442222.2015.1034437

González, Miguel. 2015. Indigenous Territorial Autonomy in Latin America: An Overview, *Latin American and Caribbean Ethnic Studies* 10, 1: 10-36. https://doi.org/10.1080/17442222.2015.1034438

Goodwin, Geoff. 2019. The Problem and Promise of Coproduction: Politics, History, and Autonomy. *World Development* 122: 501-13. https://doi.org/10.1016/j.worlddev.2019.06.007

Goyas Mejía, Ramón. 2015. Las Composiciones de Tierras de 1643 en la Nueva España. HIb. *Revista de Historia Iberoamericana* 8, 2. https://dialnet.unirioja.es/servlet/articulo?codigo=7043083

Gudynas, Eduardo and Acosta, Alberto. 2011. La renovación de la crítica al desarrollo y el buen vivir como alternativa. *Utopía y Praxis Latinoamericana* 16, 53: 71-83. https://www.redalyc.org/articulo.oa?id=27919220007

Gudynas, Eduardo. 2010. Desarrollo sostenible: una guía básica de conceptos y tendencias hacia otra economía. *Otra Economía* IV, 6: 43-66. http://gudynas.com/publicaciones/capitulos/GudynasDesarrolloGuiaHeterodoxaFRLQuito11.pdf

Gudynas, Eduardo. 2011. Debates sobre el desarrollo y sus alternativas en América Latina: Una breve guía heterodoxa. In: Lang, Miriam and Mokrani, Dunia (Eds). *Más allá del desarrollo*. Grupo Permanente de Trabajo sobre Alternativas al Desarrollo. Quito: Fundación Rosa Luxemburgo y AbyaYala. http://rosalux.org.mx/docs/Mas_alla_del_desarrollo.pdf

Gustafson, Bret. 2009. Manipulating Cartographies: Plurinationalism, Autonomy, and Indigenous Resurgence in Bolivia. *Anthropological Quarterly* 82, 4: 985-1016. http://www.jstor.org/stable/20638677

Gutiérrez Ramos, Jairo. 2012. *Los indios de Pasto contra la República 1809-1824: las rebeliones antirrepublicanas de los indios de Pasto durante la guerra de independencia*. Bogotá: Instituto Colombiano de Antropología e Historia, ICANH. http://biblioteca.icanh.gov.co/DOCS/MARC/texto/986.103G984i.pdf

Haalboom, Bethany and Natcher David. 2013. The power an peril of 'vulnerability': lending a cautious eye to community labels. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

Haesbert, Rogério. 2004. *O Mito da desterritorialização. Do "fim dos territórios" á multiterritorialidade*. Rio de Janeiro: Bertrand, Brasil.

Hale, Charles. 2006. Activist Research v. Cultural Critique: Indigenous Land Rights and the Contradictions of Politically Engaged Anthropology. *Cultural Anthropology* 21. https://doi.org/10.1525/can.2006.21.1.96

Hale, Charles. 2011. Resistencia para que? Territory, autonomy and neoliberal entanglements in the 'empty spaces' of Central America. *Economy and Society* 40, 2: 184-210. https://doi.org/10.1080/03085147.2011.548947

Hannum, Hurst. 1992. *Autonomy, Sovereignty, and Self-Determination: The Accommodation of conflicting rights*. Second printing Philadelphia

Hannum, Hurst. 1993. Rethinking Self-Determination. *Virginia Journal of International Law* 34, 1: 1-69.

Harhoff, Frederik. 1986. Institutions of Autonomy. *Nordic Journal of International Law* 55: 31-40. https://doi.org/10.1163/157181086X00256

Harrison, Helena; Birks, Melanie; Franklin, Richard & Mills, Jane. 2017. Case Study Research: Foundations and Methodological Orientations. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 18, 1, Art. 19. http://nbn-resolving.de/urn:nbn:de:0114-fqs1701195

Heintze, Hans-Joachim. 2002. Implementation of Minority Rights through the Devolution of Powers. The Concept of Autonomy Reconsidered. *International Journal on Minority and Group Rights* 9, 4: 325-343. https://www.jstor.org/stable/24675247

Henriksen, John. 2001. Implementation of the right of Self-determination of Indigenous peoples. *Indigenous affairs*. 3, 1.

Herrera Arango, Johana. 2017. Collective land tenure in Colombia. Data and trends. *CIFOR infobriefs* 213. https://doi.org/10.17528/cifor/006877

Heywood, Paolo. 2017. Ontological Turn, The. In: F. Stein, S. Lazar, M. Candea, H. Diemberger, J. Robbins, A. Sanchez & R. Stasch (Eds). The Cambridge Encyclopedia of Anthropology. http://doi.org/10.29164/17ontology

Hibbard, Michael and Lane, Marcus. 2004. By the seat of your pants: indigenous action and state response. *Planning Theory & Practice* 5, 1: 97-104. https://doi.org/10.1080/1464935042000204213a

Hibbard, Michael; Lane, Marcus and Rasmussen, Kathleen. 2008. The split personality of Planning. *Journal of Planning Literature* 23, 2: 136-151. https://doi.org/10.1177/0885412208322922

Hicks, Christina; Levine, Arielle; Agrawal, Arun; Basurto, Xavier; Breslow, Sara; Carothers, Courtney; Charnley, Susan; Sarah Coulthard, Nives Dolsak, Jamie Donatuto, Carlos Garcia-Quijano, Michael B. Mascia, Karma Norman, Melissa R. Poe, Terre Satterfield, Kevin St. Martin, Phillip Levin. 2016. Engage Key Social Concepts for Sustainability. *Science* 352, 6281: 38-40. https://doi.org/10.1126/science.aad4977

Hinkel, Jochen; Cox, Michael; Schlüter, Maja; Binder, Claudia and Falk, Thomas. 2015. A diagnostic procedure for applying the social-ecological systems framework in diverse cases. *Ecology and Society* 20, 1: 32. http://dx.doi.org/10.5751/ES-07023-200132

Holden, Erling; Linnerud, Kristin and Banister, David. 2014. Sustainable development: Our Common Future revisited. *Global Environmental Change* 26, C: 130-139. https://doi.org/10.1016/j.gloenvcha.2014.04.006

Holling, Crawford; Carpenter, Stephen; Brock, William and Gunderson, Lance. 2002. Toward an integrative synthesis. In: Gunderson, Lance and Holling, C (Eds). *Panachy. Understanding transformation in human and natural systems* Washington: Island Press.

Holt, Flora Lu. 2005. The Catch-22 of conservation: Indigenous peoples, biologists and cultural change. *Human Ecology* 33, 2: 199-215. https://doi.org/10.1007/s10745-005-2432-X

Hopwood, Bill; Mellor, Mary and O'Brien, Geoff. 2005. Sustainable Development: Mapping Different Approaches. *Sustainable Development* 13, 1: 38-52. https://doi.org/10.1002/sd.244

Houghton, Juan. 2008. Invasión petrolera. Estrategia petrolera en los territorios indígenas. In: Houghton, Juan ed. *La Tierra contra la muerte Conflictos territoriales de los pueblos indígenas en Colombia.* Centro de Cooperación al Indígena CECOIN. Organización Indígena de Antioquia OIA. Observatorio Indígena de Políticas Públicas de Desarrollo y Derechos Étnicos. http://observatorioetnicocecoin.org.co/cecoin/files/Tierra_contra_la_muerte.pdf

Howitt, Richard and Suchet-Pearson, Sandra. 2006. Rethinking the building blocks: ontological pluralism and the idea of 'management'. *Geografiska annaler* 88, B, 3: 323-335. https://doi.org/10.1111/j.1468-0459.2006.00225.x

Huber, Florian and Villamizar, Laura (Eds). 2018. *Informe especial de Derechos Humanos. Situación de lideresas y líderes sociales, de defensoras y defensores de derechos humanos y de excombatientes de las Farc-EP y sus familiares*. Cumbre Agraria Campesina, Étnica y Popular - Coordinación Social y Política Marcha Patriótica. Equipo Operativo Nacional de Garantías y Derechos Humanos - Instituto de Estudios para el Desarrollo y la Paz, Indepaz. Ideas verdes 8. Heinrich Boll Stiftung.

Hugé, Jean; Waas, Tom; Dahdouh-Guebas, Farid; Koedam, Nico; Block, Thomas. 2013. A discourse-analytical perspective on sustainability assessment: interpreting sustainable development in practice. *Sustainability Science* 8: 187-198. https://doi.org/10.1007/s11625-012-0184-2

Huntington, Henry. 2000. Using Traditional Ecological Knowledge in Science: Methods and Applications. *Ecological Applications* 10, 5: 1270-1274. https://doi.org/10.1890/1051-0761(2000)010[1270:UTEKIS]2.0.CO;2

Instituto Colombiano de Reforma Agraria (INCORA). 1978. *Resolución 01215 del 30 de noviembre de 1978. Por la cual se constituyen con el carácter de reservas especiales, tres globos de tierras baldías, ubicadas en el municipio de Orocué, Intendencia del Casanare, con destino a las comunidades indígenas Sáliba que tradicionalmente las han venido ocupando*. Bogotá

Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM). 2015. *Estudio Nacional del Agua 2014*. Bogotá. http://documentacion.ideam.gov.co/openbiblio/bvirtual/023080/ENA_2014.pdf

Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM). 2017. *Colombia. Cambio en la superficie cubierta por bosque natural según departamento. 2015-2016*. Map. http://www.ideam.gov.co/web/ecosistemas/cambio-de-la-superficie-cubierta-por-bosque-natural

Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Red Nacional de Jardines Botánicos de Colombia. 2013. *Plantas priorizadas para la conservación en la Región Orinoquia*. 309 registros, aportados por: García, H. Contacto del recurso, Sofrony, C. Creador del recurso, González, M. Proveedor de metadatos. Versión 6.0. Database. http://i2d.humboldt.org.co/ceiba/resource.do?r=*Orinoquia*_plantas_2013

Instituto Geográfico Agustín Codazzi (IGAC) and Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM). 2010. *Protocolo para la identificación y evaluación de los procesos de degradación de suelos y tierras por desertificación*. Bogotá: IGAC, IDEAM, MAVDT. http://capacitacion.siac.ideam.gov.co/SIAC/protocolosSuelos/20120814_Protocolo_desertificacion.pdf

Inter-American Commission on Human Rights (IACHR). 2009. *Indigenous and tribal peoples' rights over their ancestral lands and natural resources norms and jurisprudence of the inter-American human rights system*. Inter-American Commission on Human Rights. OEA/Ser.L/V/II. Doc. 56/09. http://cidh.org/countryrep/Indigenous-Lands09/TOC.htm

International Labour Organisation (ILO). 2013. Understanding the Indigenous and Tribal Peoples Convention, 1989 No. 169. *Handbook for ILO Tripartite Constituents*. http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/publication/wcms_205225.pdf

Islam, Durdana and Berkes, Fikret. 2016. Can small-scale commercial and subsistence fisheries co-exist? Lessons from an indigenous community in northern Manitoba, Canada. *Maritime Studies* 15, 1: 1-16. https://link.springer.com/article/10.1186/s40152-016-0040-6

Janssen, Marco; Anderies, John and Ostrom, Elinor. 2007. Robustness of Social-Ecological Systems to Spatial and Temporal Variability. *Society & Natural Resources* 20:4, 307-322. https://doi.org/10.1080/08941920601161320

Jaramillo Botero, Maria. 1997. La intolerancia cultural, un obstáculo para la construcción del desarrollo sostenible en la *Orinoquia*. In: Sabanas, vegas y palmares. Reflexiones sobre el uso del agua en la *Orinoquia*. Bogotá: Impreandes-Presencia. http://www.horizonteverde.org.co/attachments/article/19/SABANAS%20%20VEGAS%20Y%20PALMARES%20%20EL%20USO%20DEL%20AGUA%20EN%20LA%20*ORINOQUIA*%20COLOMBIANA.pdf

Jaramillo Jaramillo, Efraín. 2004. *Los indígenas colombianos y el Estado. Desafíos ideológicos y políticos de la multiculturalidad*. Grupo Internacional de Trabajo sobre Asuntos Indígenas (IWGIA). https://www.iwgia.org/images/publications//0558_libro_los_indigenas_y_el_estado_2011_COMPLETO.pdf

Johnson, Jay; Howitt, Richard; Cajete, Gregory; Berkes, Fikret; Louis, Renee; Kliskey, Andrew. 2016. Weaving Indigenous and sustainability sciences to diversify our methods. *Sustainability Science* 11. https://doi.org/10.1007/s11625-015-0349-x

Jojola, Ted. 2008. Indigenous Planning - An Emerging Context. *Canadian Journal of Urban Research* 17: 37-47. https://www.uwinnipeg.ca/ius/docs/cjur/37-47_Jojola.pdf

Jojola, Ted. 2013. Indigenous planning: towards a seven generations model. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

Jordán Ramos, Osvaldo. 2010. Entré durante el día y salí por la noche": relaciones de poder, ambiente y pueblos indígenas en un Panamá globalizado. In: González, Miguel; Burguete Cal y Mayor, Araceli and Ortiz, Pablo (Eds). *La autonomía a debate: autogobierno indígena y Estado plurinacional en América Latina*. Quito: FLACSO, Sede Ecuador, Cooperación Técnica Alemana (GTZ), Grupo Internacional de Trabajo sobre Asuntos Indígenas (IWGIA), Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS), Universidad Intercultural de Chiapas (UNICH).

Károly, Kiss. 2011. Rise and fall of the Concept Sustainability. *Journal of Environmental Sustainability* 1, 1, Article 1. http://doi.org/10.14448/jes.01.0001

Kawulich, Barbara. 2005. Participant Observation as a Data Collection Method. *Forum Qualitative Sozialforschung / Qualitative Social Research* 6, 2. http://dx.doi.org/10.17169/fqs-6.2.466

Kellert, Stephen; Jai N. Mehta Syma A. Ebbin Laly Lichtenfeld, L. 2000. Community Natural Resource Management: Promise, Rhetoric, and Reality. *Society & Natural Resources* 13, 8: 705-15. https://doi.org/10.1080/089419200750035575

Kent, Michael. 2008. The Making of Customary Territories: Social Change at the Intersection of State and Indigenous Territorial Politics on Lake Titicaca, Peru. *The Journal of Latin American and Caribbean Anthropology* 13, 2: 283-310.

Keuffer, Nicolas. 2016. L'autonomie locale, un concept multidimensionnel: comment le définir, comment le mesurer et comment créer un indice d'autonomie locale comparative? *Revue Internationale de politique compare* 4, 23: 443-490. https://www.cairn.info/revue-internationale-de-politique-comparee-2016-4-page-443.htm

Kiser, Larry and Elinor Ostrom. 1982. The Three Worlds of Action. A Metatheoretical Synthesis of Institutional Approaches. In: Elinor Ostrom (Ed.). *Strategies of Political Inquiry*. Beverly Hills: Sage Publications.

Knafla, Louis. 2010. "This Is Our Land": Aboriginal Title at Customary and Common Law in Comparative Contexts. In: Knafla, Louis and Westra, Haijo (eds). *Aboriginal title and Indigenous peoples: Canada, Australia, and New Zealand.* Vancouver: UBC Press. https://www.ubcpress.ca/asset/9299/1/9780774815604.pdf

Kohlbacher, Florian. 2006. The Use of Qualitative Content Analysis in Case Study Research. *Forum Qualitative Sozialforschung /Qualitative Social Research* 7, 1. http://dx.doi.org/10.17169/fqs-7.1.75

Koven, Michèle. 2014. Interviewing: Practice, Ideology, Genre, and Intertextuality. *Annual Review of Anthropology* 43, 1: 499-520. https://doi.org/10.1146/annurev-anthro-092412-155533

Krech, Shepard. 1999. *The Ecological Indian. Myth and History*. New York: Norton.

Lane, Marcus. 2003. Participation, Decentralization, and Civil Society: Indigenous Rights and Democracy in Environmental Planning. *Journal of Planning Education and Research* 22, 4: 360-373. https://doi.org/10.1177/0739456x03022004003

Lapidoth, Ruth. 1997. Autonomy: flexible solutions to ethnic conflicts. Washington: United States Institute of Peace press.

Larson, Anne and Lewis-Mendoza, Jadder. 2012. Decentralisation and devolution in Nicaragua's North Atlantic Autonomous Region: natural resources and Indigenous peoples' rights. *International Journal of the Commons* 6, 2: 179-199. http://doi.org/10.18352/ijc.315

Larson, Anne. 2010. Making the 'rules of the game': Constituting territory and authority in Nicaragua's indigenous communities. *Land Use Policy* 27, 4: 1143-1152. https://doi.org/10.1016/j.landusepol.2010.03.004

Larson, Anne; Cronkleton, Peter and Pulhin, Juan. 2015. Formalizing Indigenous Commons: The Role of 'Authority' in the Formation of Territories in Nicaragua, Bolivia, and the Philippines. *World Development* 70: 228-238. https://doi.org/10.1016/j.worlddev.2015.02.004

Larson, Anne; Soto, Fernanda; Mairena, Dennis; Moreno, Edda; Mairena, Eileen and Mendoza-Lewis, Jadder. 2016. The Challenge of 'Territory': Weaving the Social Fabric of Indigenous Communities in Nicaragua's Northern Caribbean Autonomous Region. *Bulletin of Latin American Research* 35, 3: 322-37. https://doi.org/10.1111/blar.12365

Lavelle, Patrick; Rodríguez, Rodríguez, Nubia; Arguello, Orlando; Bernal, Jaime; Botero, Cesar; Chaparro, Paula; Gómez, Yolanda; Gutiérrez, Albert; Hurtado, María del Pilar; Loaiza, Sandra; Pullido, Sandra Xiomara; Rodríguez, Edgar; Sanabria, Catalina; Velásquez, Elena; Fonte, Steven. 2014. Soil ecosystem services and land use in the rapidly changing Orinoco River Basin of Colombia. *Agriculture, Ecosystems & Environment* 185 Supplement C: 106-117. https://doi.org/10.1016/j.agee.2013.12.020

Lea, David. 2008. Chapter One. Aboriginal Entitlement and Conservative Theory. In *Aboriginal Entitlement and Conservative Theory*, (Leiden, The Netherlands: Brill | Nijhoff). https://doi.org/10.1163/ej.9789004166943.i-296.6

Leal León, Claudia and Restrepo Uribe, Eduardo. 2003. *Unos bosques sembrados de aserríos: historia de la extracción maderera en el pacífico colombiano.* Medellín: Ed.ial Universidad de Antioquia. http://www.ram-wan.net/restrepo/documentos/bosques-1.pdf

Lélé, Sharachchandra. 1991. Sustainable development: A critical review. *World Development* 19, 6: 607-621. https://doi.org/10.1016/0305-750X9190197-P

Li, Tania. 2010. Indigeneity, Capitalism, and the Management of Dispossession. *Current Anthropology* 51, 3: 385-414. https://www.jstor.org/stable/10.1086/651942

Londoño Berrío, Hernando. 2009. La jurisdicción penal y el fuero indígenas en Colombia: su vigencia material como consecuencia del conflicto político armado y de los límites impuestos por los derechos humanos. *Revista Nuevo Foro penal* 5, 73. http://publicaciones.eafit.edu.co/index.php/nuevo-foro-penal/article/view/1870

Londoño Toro, Beatriz; Schütze Páez, Klaus; Lagos, Adriana; Rodríguez, Gloria; Gutiérrez, Ruth; Peralta, Lala; Isaza, Mónica; Quiñones Serrano, Omar. 2004. *Función ecológica de la propiedad en los resguardos indígenas de Colombia*. Bogotá: Centro Ed.ial Universidad del Rosario.

Lopes de Souza, Marcelo. 2016. Lessons from Praxis: Autonomy and Spatiality in Contemporary Latin American Social Movements. *Antipode* 48, 5: 1292-1316. http://dx.doi.org/10.1111/anti.12210

Lyver, Phil and Tylianakis, Jason. 2017. Indigenous peoples: Conservation paradox. *Science* 357, 6347: 142-143. https://doi.org/10.1126/science.aao0780

Machado Cartagena, Absalón de Jesús and Vivas, Julián. 2009. *Ensayos para la historia de la política de tierras en Colombia: de la colonia a la creación del Frente Nacional*. Bogotá: Universidad Nacional de Colombia.

MacInnes, Angus; Colchester, Marcus and Whitmore, Andrew. 2017. Free, prior and informed consent: how to rectify the devastating consequences of harmful mining for Indigenous peoples. *Perspectives in Ecology and Conservation* 15, 3: 152-160. https://doi.org/10.1016/j.pecon.2017.05.007

Malloy, Tove; Osipov, Alexander and Vizi, Balázs. 2015. *Managing Diversity through Non-Territorial Autonomy: Assessing Advantages, Deficiencies, and Risks*. Oxford: Oxford University Press. http: //doi.org/10.1093/acprof: oso/9780198738459.001.0001

Mannell, Laura; Palermo, Frank and Smith, Crispin. 2013. Community-based and comprehensive: reflections on planning and action in First Nations. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

Mansutti Rodríguez, Alexander. 2010. *El largo camino de las criaturas de Wajari: piaroas, sistemas de interdependencia regional y modelos de poblamiento del Orinoco medio*. Caracas, Venezuela: Universidad Nacional Experimental de Guyana.

Márquez Guerra, José. 2016. Reglamentos indígenas en áreas protegidas de Bolivia: el caso del Pilón Lajas. *Revista de Derecho* 46: 71-110. http://www.redalyc.org/articulo.oa?id=85147561004

Martínez Delgado, Astrid and Delgado Barrera, Martha. 2017. *Estudio sobre el impacto de la actividad petrolera en las regiones productoras de Colombia*. Informe de Fedesarrollo a Ecopetrol S.A. Caracterización departamental Casanare.

Martínez Orozco, Carlos. 2008. La inmigración extranjera a Casanare: 1850-1920. In: Fajardo Becerra, Hernán and Gutiérrez, Manuel (Eds). *Reseña histórica de Casanare*. Bogotá: Fondo mixto de Casanare.

Martinez-Alier, Joan, Leah Temper, Daniela Del Bene, and Arnim Scheidel. 2016. Is There a Global Environmental Justice Movement? *The Journal of Peasant Studies* 43, 3: 731-55. https://doi.org/10.1080/03066150.2016.1141198

Massieu Trigo, Yolanda. 2017. Movimiento indígena, ordenamiento territorial y biodiversidad en Cuetzalan, Puebla. *Argumentos* 30, 83: 119-148.

Matunga, Hirini. 2013. Theorizing indigenous planning. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

Maynard, Lily and Jacobson, Susan. 2019. The Influence of Group Maturity on Community-Based Environmental Management in Kenya. *Journal of Environmental Planning and Management* 1-21. https://doi.org/10.1080/09640568.2019.1572346

Mayring, Philipp. 2000. Qualitative Content Analysis. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 1, 29. https://www.researchgate.net/publication/215666096_Qualitative_Content_Analysis

Mayring, Philipp. 2014. Qualitative content analysis: theoretical foundation, basic procedures and software solution. Monograph. Klagenfurt.

Massé, Frédéric and McDermot, Jeremy (2017). *Debida diligencia en la cadena de suministros de oro colombiana el sector minero aurífero en chocó*. OECD. https://mneguidelines.oecd.org/Choco-Colombia-Gold-Baseline-ESP.pdf

McGinnis, Michael and Ostrom, Elinor. 2014. Social-ecological system framework: initial changes and continuing challenges. *Ecology and Society* 19, 2: 30. http://dx.doi.org/10.5751/ES-06387-190230

McLain, Rebecca, Steven Lawry, and Maria Ojanen. 2018. Fisheries' Property Regimes and Environmental Outcomes: A Realist Synthesis Review. *World Development* 102: 213-27. https://doi.org/10.1016/j.worlddev.2017.09.016

Mejía Gutiérrez, Mario and Mejía Aragón, Camilo. 1987. *Colección de germoplasma de yuca en la Región de Planas*. Departamento del Meta y Comisaría del Vichada Colombia. Capítulo II. Universidad Nacional de Colombia/International Board for Plant Genetic Resources, Rome, Italy. Scanned. 19p. http://hdl.handle.net/10568/81430

Merriam, Sharan. 2009. Qualitative research: a guide to design and implementation. Second edition. San Francisco: Jossey-Bass.

Mesa permanente de Concertación (MPC). 2015. *De gobierno a gobierno tejiendo escenarios nacionales de concertación desde los pueblos y organizaciones indígenas con el gobierno nacional.* : https://mpcindigena.org/attachments/article/407/de_gobierno_a_gobierno_2daedicion.pdf

Miller, Robert. 2011. The international law of colonialism: a comparative analysis. *Lewis & Clark Law Review* 15, 4: 847-922. https://law.lclark.edu/live/files/10652-lcb154art1millerpdf

Ministerio de ambiente y Desarrollo sostenible (MADS) y Ministerio de Agricultura y Desarrollo rural (MADR). 2017. *Marco de gestión ambiental y social desarrollo de paisajes sostenibles bajos en carbón en la*

región de Orinoquía P160680. http://documents.worldbank.org/curated/en/553561506980818830/pdf/SFG3658-EA-SPANISH-P160680-Box405301B-PUBLIC-Disclosed-10-2-2017.pdf

Ministerio de ambiente y Desarrollo sostenible (MADS). 2016. *Orientaciones a las autoridades ambientales para la definición y actualización de las determinantes ambientales y su incorporación en los planes de ordenamiento territorial municipal y distrital.* https://www.minambiente.gov.co/images/OrdenamientoAmbientalTerritorialyCoordinacionDelSIN/pdf/Orientaciones_para_la_definicion_y_actualiza_de_las__Det_Amb.pdf

Ministerio de ambiente y Desarrollo sostenible (MADS). 2019. *Informe de gestión al congreso de la República. Agosto 2018 - Junio 2019.*

Ministerio de salud y Protección social (Minsalud). 2016. *Perfil de Salud de la Población Indígena, y medición de desigualdades en salud.* Colombia 2016.

Ministerio del Interior de Colombia – Mininterior (2013a). *Plan de Salvaguarda de los Pueblos indígenas del Resguardo Caño Mochuelo. Comunidades Resguardo indígena Caño Mochuelo.* https://siic.mininterior.gov.co/sites/default/files/resguardo_cano_mochuelo_-_diagnostico_comunitario.pdf

Ministerio del Interior de Colombia – Mininterior (2013b). *JIWISIKUANITSI WAJANAKUA LIWAISINAMUTO. PLAN SALVAGUARDA SIKUANI.* Organización Nacional Indígena de Colombia –ONIC; Ministerio del Interior. https://www.mininterior.gov.co/sites/default/files/p.s_sikuani_onic.pdf

Ministerio del Interior (Mininterior). 2019. *Consultas Previas Reuniones - Junio 2019.* Dirección de Consulta previa. Database. https://www.datos.gov.co/dataset/Consultas-Previas-Reuniones-Junio-2019/uhqy-y8xt

Misión de observación electoral- Moe and Corporación Nuevo Arco Iris n.d.. *Monografía Político Electoral Departamento de Casanare 1997 a 2007.* https://moe.org.co/home/doc/moe_mre/CD/PDF/casanare.pdf

Mistry, Jayalaxshmi, and Berardi, Andrea. 2016. Bridging Indigenous and Scientific Knowledge. *Science* 352, 6291: 1274-75. http://dx.doi.org/10.1126/science.aaf1160

Molano Barrero, Joaquín. 1998. Biogeográfia de la *Orinoquia* Colombiana. In: *Colombia Orinoco.* Bogotá: Fondo F.E.N. Colombia para la Protección de la Naturaleza. http://bdigital.unal.edu.co/7324/1/BIOGEOGRAF%C3%8DA_DE_LA_*ORINOQUIA*_COLOMBIANA.pdf

Molina Triana, Alfredo Guillermo. 2014. *Las autoridades del sistema nacional ambiental: un análisis desde la política pública.* Bogotá: Universidad Sergio Arboleda.

http://repository.usergioarboleda.edu.co/bitstream/handle/11232/84/Las_autoridades_sistema_nacional_ambiental.pdf;jsessionid=7D4E7FEA06604BAEDCDC12ED93EDA4EC?sequence=1

Mora Bayo, Mariana. 2015. The Politics of Justice: Zapatista Autonomy at the Margins of the Neoliberal Mexican State. *Latin American and Caribbean Ethnic Studies* 10, 1: 87-106. https://doi.org/10.1080/17442222.2015.1034439

Moreira, Danielle; Alibhai, Sky; Jewell, Zoe; da Cunha, Cristina; Seibert, Jardel and Gatti, Andressa. 2018. Determining the numbers of a landscape architect species. *Tapirus terrestris*, using footprints. *PeerJ* 6:e4591. https://doi.org/10.7717/peerj.4591

Morey, Nancy and Morey, Robert 1980. Los Sáliva. In: Walter Coppens ed. *Los aborígenes de Venezuela I*. Caracas: La Salle.

Morey, Robert. 1972. Notes on the Saliva of Eastern Colombia. *Current Anthropology* 13, 1: 144-147. http://www.jstor.org/stable/2741086

Morrow, Christopher E., and Watts, Rebecca. 1996. Donor-Initiated Common Pool Resource Institutions: The Case of the Yanesha Forestry Cooperative. *World Development* 24, 10: 1641-57. https://doi.org/10.1016/0305-750X(96)00064-2

Muñoz Onofre, Juan. 2014. *La brecha entre el reconocimiento y la implementación de los derechos territoriales de los pueblos indígenas: análisis sobre su configuración en las normas, las políticas y los jueces, tras la aprobación de la Constitución Política de 1991*. Master thesis, Universidad del Rosario, Bogotá, Colombia.

Murgueitio Manrique, Carlos. 2015. El proceso de desamortización de las tierras indígenas durante las repúblicas liberales de México y Colombia, 1853-1876. *Anuario de historia regional y de las fronteras* 20, 1: 73-95. http://revistas.uis.edu.co/index.php/anuariohistoria/article/view/4648/5081

Murphy Bret; Andersen, Alan and Parr, Catherine. 2016. The underestimated biodiversity of tropical grassy biomes. *Phil. Trans. R. Soc. B* 371: 20150319. http://dx.doi.org/10.1098/rstb.2015.0319

Nadasdy, Paul. 2005. Transcending the Debate over the Ecologically Noble Indian: Indigenous peoples and Environmentalism. *Ethnohistory* 1, 52, 2: 291-331. https://doi.org/10.1215/00141801-52-2-291

Nagendra, Harini and Ostrom, Elinor. 2014. Applying the social-ecological system framework to the diagnosis of urban lake commons in Bangalore, India. *Ecology and Society* 19, 2. http://dx.doi.org/10.5751/ES-06582-190267

Naranjo Arcila, Alejandra. 2011. *Avifauna: conocimiento y uso local asociado a los humedales de Piñalito, Wisirare, Malvinas y Sabanales en Orocué, Casanare Colombia*. Bachelor thesis, Pontificia Universidad Javeriana, Bogotá, Colombia.

Naylor, Lindsey. 2017. Reframing autonomy in political geography: A feminist geopolitics of autonomous resistance. *Political Geography* 58 C. https://doi.org/10.1016/j.polgeo.2017.01.001

New Zealand Ministry for Culture and Heritage. 2017. *'Tahupōtiki Wiremu Rātana'. Biography.* https://nzhistory.govt.nz/people/tahupotiki-wiremu-ratana

Nicholls, Ruth. 2009. Research and Indigenous participation: critical reflexive methods. *International Journal of Social Research Methodology* 12, 2: 117-126. https://doi.org/10.1080/13645570902727698

Offen, Karl. 2003. The Territorial Turn: Making Black Territories in Pacific Colombia. *Journal of Latin American Geography* 2. https://doi.org/doi:10.1353/lag.2004.0010

Oliveira, João Pacheco de. 1998. Uma etnologia dos "índios misturados"? Situação colonial, territorialização e fluxos culturais. *Mana 4,* 1: 47-77. https://dx.doi.org/10.1590/S0104-93131998000100003

Organización Nacional Indígena de Colombia (ONIC). 1991. *Constituyente indígena.* N. 3. http://observatorioetnicocecoin.org.co/cecoin/files/Constituyente%20indigena%203.pdf

Organización Nacional Indígena de Colombia (ONIC). 2015. *Audiencia pública: "Pueblos indígenas, conflicto armado y paz".* Congreso de la República - Auditorio Luis Guillermo Vélez. September 3. http://www.onic.org.co/noticias/818-ponencia-organizacion-nacional-indigena-de-colombia-onic

Organización Nacional Indígena de Colombia (ONIC). 2019. *Organizaciones filiales.* : https://www.onic.org.co/onic

Orta Martínez, Martí; Napolitano, Dora; MacLennan, Gregor; O'Callaghan, Cristina; Ciborowski, Sylvia and Fabregas, Xavier. 2007. Impacts of petroleum activities for the achuar people of the Peruvian amazon: summary of existing evidence and research gaps. *Environmental Research Letters* 2, 4. http://dx.doi.org/10.1088/1748-9326/2/4/045006

Orta-Martínez, Martí and Finer, Matt. 2010. Oil Frontiers and Indigenous Resistance in the Peruvian Amazon. *Ecological Economics* 70, 2: 207-18.https://doi.org/10.1016/j.ecolecon.2010.04.022

Ortiz Gómez, Francisco. 1989. Botánica médica guahibo. Plantas medicinales, mágicas y psicotropicas utilizadas por los sikuani y cuiba llanos orientales de Colombia. *Caldasia* 16, 76: 14-22. www.jstor.org/stable/44243535

Ortiz Tirado, Pablo. 2014. Justicia comunitaria y pluralismo jurídico en América Latina - Una panorámica de cuarto de siglo. In: Aylwin, José and Tamburini, Leonardo. *Convenio 169 de la OIT: Los desafíos de su implementación en América Latina a 25 años de su aprobación.* (IWGIA) Grupo Internacional de Trabajo sobre Asuntos Indígenas. https://www.iwgia.org/images/publications/0701_convenio169OIT2014.pdf

Ospina Bozzi, Ana. 2015. Mantenimiento y revitalización de lenguas nativas en Colombia. Reflexiones para el camino. *Forma y Función* 28, 2: 11-48.

Ostrom, Elinor. 1985. *The Origins of Institutions for Collective Action in Common-Pool Resource Situations*. Workshop in Political Theory & Policy Analysis Indiana University. Bloomington: Conference paper. https://dlc.dlib.indiana.edu/dlc/handle/10535/8222

Ostrom, Elinor. 1990. *Governing the commons. The evolution of institutions for collective action*. New York: Cambridge University press.

Ostrom, Elinor. 1999. Design principles and threats to Sustainable organisations that manage commons. *Workshop in Political Theory and Policy Analysis*. Indiana University. http://beyondostrom.blog.rosalux.de/files/2013/05/Design-Principles-and-Threats-to-Sustainable-Organisations-That-Manage-Commons.pdf

Ostrom, Elinor. 2005. *Understanding Institutional Diversity*. Princeton University Press. ProQuest Ebook Central. http://ebookcentral.proquest.com/lib/slub/detail.action?docID=483578.

Ostrom, Elinor. 2007. A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences* 104, 39: 15181-15187.http://dx.doi.org/10.1073/pnas.0702288104

Ostrom, Elinor. 2009. A general framework for analysing sustainability of social-ecological systems. *Science* 325, 419-422. http://dx.doi.org/10.1126/science.1172133

Ostrom, Elinor; Burger, Joanna; Field, Christopher; Norgaard, Richard; and Policansky, David. 1999. Revisiting the Commons: Local Lessons, Global Challenges. *Science* 284, 5412: 278-282. https://dx.doi.org/10.1126/science.284.5412.278

Oviedo, Gonzalo and Maffi, Luisa. 2000. *Indigenous and traditional peoples of the world and ecoregion conservation: an integrated approach to conserving the world's biological and cultural diversity*. Gland, Switzerland: WWF International - Terralingua.

OXFAM 2014. *Divide and Purchase. How land ownership is being concentrated in Colombia*. Oxfam Research Reports.

Paredes, Julieta. 2014. *Hilando Fino. Desde el feminismo comunitario*. Coopera-tiva el Rebozo, Zapateándole, Lente Flotante,Ft corlito que's pa largo y AliFem AC. https://sjlatinoamerica.files.wordpress.com/2013/06/paredes-julieta-hilando-fino-desde-el-feminismo-comunitario.pdf

Parques Nacionales Naturales de Colombia (PNN). 2014. *Concepto Sistema nacional de áreas protegidas/desarrollo de proyectos mineros y energéticos en áreas protegidas/ licencia ambiental/ reservas forestales/sustracción de reservas forestales*. Radicado 20141300023881.

http://www.parquesnacionales.gov.co/portal/wp-content/uploads/2014/03/KMBT_211_02995.pdf

Payán, Esteban and Trujillo, Luis. 2006. The Tigrilladas in Colombia. *CAT News* 44: 25-28. https://www.researchgate.net/profile/Esteban_Payan/publication/265666588_The_Tigrilladas_in_Colombia/links/56210afb08aea35f26811b16.pdf

Peñuela Recio, Lourdes; Fernández, Andrea; Castro lima, Francisco and Ocampo Duran, Álvaro. 2011. *Uso y manejo de forrajes nativos en la sabana inundable de la Orinoquia.* Convenio de cooperación interinstitucional entre The Nature Conservancy y la Fundación Horizonte Verde. Fundación Biodiversidad de España; Corporinoquia. http://www.horizonteverde.org.co/noticias/LIBRO-FORRAJES-NATIVOS-FINAL.pdf

Peñuela Recio, Lourdes; Ocampo Duran, Álvaro., Fernández, Andrea; Castro lima, Francisco. 2012. *Estrategias para el mejoramiento de la productividad ganadera y la conservación de la Sabana inundable en la orinoquía.* Convenio de cooperación interinstitucional entre The Nature Conservancy y la Fundación Horizonte Verde. Fundación Biodiversidad de España; Corporinoquia, Fundación Mario Santo Domingo.

Perreault, Tom. 2013. Dispossession by Accumulation? Mining, Water and the Nature of Enclosure on the Bolivian Altiplano. *Antipode*, 45: 1050-1069. https://doi.org/10.1111/anti.12005

Pert, Petina; Hill, Rosemary; Maclean, Kirsten; Dale, Allan; Rist, Phil; Schmider, Joann; Talbot, Leah and Tawake, Lavenie. 2015. Mapping cultural ecosystem services with rainforest aboriginal peoples: Integrating biocultural diversity, governance and social variation. *Ecosystem Services* 13: 41-56. https://doi.org/10.1016/j.ecoser.2014.10.012

Peters, Ina. 2014. Too Abstract to Be Feasible? Applying the Grounded Theory Method in Social Movement Research. *GIGA Working Paper.* 247. German Institute of Global and Area Studies, Leibniz - Institut für Globale und Regionale Studien. https://www.giga-hamburg.de/en/system/files/publications/wp247_peters.pdf

Peterson, Garry; Harmackova, Zuzana; Meacham, Megan; Queiroz, Cibele; Jiménez-Aceituno, Amanda; Kuiper, Jan; Malmborg, Katja; Sitas, Nadia and Bennett, Elena. 2018. Welcoming different perspectives in IPBES: "Nature's contributions to people" and "Ecosystem services". *Ecology and Society* 231:39. https://doi.org/10.5751/ES-10134-230139

Pickerill, Jenny and Chatterton, Paul. 2006. Notes towards autonomous geographies: creation, resistance and self-management as survival tactics. *Progress in Human Geography* 30, 6: 730-746. https://doi.org/10.1177/0309132506071516

Pineda Camacho, Roberto. 2012. El Congreso Indigenista de Pátzcuaro, 1940, una nueva apertura en la política indigenista de las Américas. *Bitácoras de antropología e historia de la antropología en América Latina Baukara* 2, 10-28. http://www.humanas.unal.edu.co/baukara/files/9714/5506/2033/Baukara2.pdf

Poorter, L., Bongers, F., Aide, T. *et al.* 2016. Biomass resilience of Neotropical secondary forests. *Nature* 530**,** 211–214. https://doi.org/10.1038/nature16512

Porter, Libby and Barry, Janice. 2015. Bounded recognition: urban planning and the textual mediation of Indigenous rights in Canada and Australia. *Critical Policy Studies* 9, 1: 22-40. http://dx.doi.org/10.1080/19460171.2014.912960

Porter, Libby. 2010. *Unlearning the Colonial Cultures of Planning.* Surrey, UK: Ashgate. http://periferiesurbanes.org/wp-content/uploads/2013/12/Libby_Porter_Unlearning_the_Colonial_Cultures_ofBookFi.org_1.pdf

Porter, Libby. 2013. *Coexistence in cities: the challenge of indigenous urban planning in the twenty-fist century.* In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). Reclaiming indigenous planning. Montreal: McGill-Queen's University Press.

Porter, Libby; Matunga, Hirini; Viswanathan, Leela; Patrick, Lyana; Walker, Ryan; Sandercock, Leonie; Moraes, Dana; Frantz, Jonathan; Thompson-Fawcett, Michelle; Riddle, Callum & Jojola, Theodore Ted. 2017. Indigenous Planning: from Principles to Practice/A Revolutionary Pedagogy of/for Indigenous Planning/Settler-Indigenous Relationships as Liminal Spaces in Planning Education and Practice/Indigenist Planning/What is the Work of non-Indigenous People in the Service of a Decolonizing Agenda?/Supporting Indigenous Planning in the City/Film as a Catalyst for Indigenous Community Development/Being Ourselves and Seeing Ourselves in the City: Enabling the Conceptual Space for Indigenous Urban Planning/Universities Can Empower the Next Generation of Architects, Planners, and Landscape Architects in Indigenous Design and Planning. *Planning Theory & Practice* 18, 4: 639-666. https://doi.org/10.1080/14649357.2017.1380961

Poteete, Amy, Janssen, Marco and Ostrom, Elinor. 2010. *Working Together: Collective Action, the Commons, and Multiple Methods in Practice.* New Jersey: Princeton University Press. https://www.researchgate.net/publication/49956255_Working_Together_Collective_Action_The_Commons_and_Multiple_Methods_in_Practice_A_Poteete_MA_Janssen_E_Ostrom

Pratchett, Lawrence. 2004. Local Autonomy, Local Democracy and the 'New Localism'. *Political Studies* 52, 2: 358-375. https://doi.org/10.1111/j.1467-9248.2004.00484.x

Premauer, Julia. 2013. *Rights, Conservation, and Governance: Indigenous peoples - National Parks Collaboration in Makuira, Colombia.* Ph.D. dissertation, University of Manitoba, Winnipeg, Canada. http://hdl.handle.net/1993/14430

Presidencia de la República de Colombia (PRC). 2012. *Programa Presidencial para la Formulación de estrategia y acciones para el desarrollo integral de los Pueblos indígenas de Colombia*. Bogotá: Imprenta nacional de Colombia.

Pretty, Jules, Adams, Bill; Berkes, Fikret; de Athayde, Simone; Dudley, Nigel; Hunn, Eugene; Maffi, Luisa; Milton, Kay; Rapport, David; Robbins, Paul; Sterling, Eleanor; Stolton, Sue; Tsing, Anna; Vintinnerk, Erin and Pilgrim, Sarah. 2009. The Intersections of Biological Diversity and Cultural Diversity: Towards Integration. *Conservation and Society* 7, 2: 100-112. https://doi.org/10.4103/0972-4923.58642

Procter, Andrea and Chaulk, Keith. 2013. Our beautiful land: the challenge of Nunatsiavut Land-use Planning. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

PROFOR. 2017a. *Plantaciones forestales con fines comerciales en Colombia: Oportunidades y Desafíos*. Bogotá, Colombia.

Prusak, Yvonne; Walker, Ryan and Innes, Robert. 2016. Toward Indigenous Planning? First Nation Community Planning in Saskatchewan, Canada. *Journal of Planning Education and Research* 36, 4: 440-450. https://doi.org/10.1177/0739456X15621147

Pueblo Salia and Estrada Ramírez, Hortensia n.d.. *Diccionario electrónico sáliba-español: una herramienta interactiva para la documentación de la lengua y la cultura sáliba*. Instituto Caro y Cuervo. http://saliba.caroycuervo.gov.co/index.php/P%C3%A1gina_principal

Pueblo Salia n.d. *Modelo de salud intercultural para el Pueblo Indígena Sáliba*. Slides. Unpublished. ASAISOC.

Pueblo Salia y Ministerio del interior. 2015. *Plan organizativo Resguardo Indígena Salia El Duya*. http://siic.mininterior.gov.co/sites/default/files/plan_organizativo_estructurado_del_resguardo_indigena_saliba_el_*Duya*.pdf

Pueblo Salia. 2005. *Plan de vida Pueblo Salia. Sueños de Pervivencia*. ASAISOC. Orocué.

Pueblo Salia. 2011. *Plan de vida Pueblo Salia. Sueños de Pervivencia*. Actualización. Unpublished. ASAISOC.

Pueblo Salia. 2012a. *Mandato Territorial para la Vida del Pueblo Indígena Salia*. ASAISOC, Corporinoquia. Yopal.

Pueblo Salia. 2012b. *Mandato Pedagógico, Propio Intercultural y Bilingüe MAPIRE*. Unpublished. ASAISOC.

Pueblo Salia. 2017. Estatutos. Asociación de Autoridades Indígenas Sália de Orocué - Casanare. Unpublished. ASAISOC.

Puyana Mutis, Aura. 2013. *La dinámica de la concertación Estado - Pueblos Indígenas en Colombia. Los casos de la Mesa Permanente de Concertación y la Mesa Regional Amazónica 1996-2012*. Quito: GIZ. https://bivica.org/files/dinamica-concertacion.pdf

Quijano, Anibal. 2007. Colonialidad del poder y clasificación social. In: Castro-Gómez, Santiago and Grosfoguel, Ramón. *El giro decolonial: reflexiones para una diversidad epistémica más allá del capitalismo global*. Bogotá: Siglo del Hombre Ed.es; Universidad Central, Instituto de Estudios Sociales Contemporáneos y Pontificia Universidad Javeriana, Instituto Pensar. http://www.unsa.edu.ar/histocat/hamoderna/grosfoguelcastrogomez.pdf

Quinn, Claire; Huby, Meg; Kiwasila Hilda, and Lovett, Jon. 2007. Design Principles and Common Pool Resource Management: An Institutional Approach to Evaluating Community Management in Semi-Arid Tanzania. *Journal of Environmental Management* 84, 1: 100-13. https://doi.org/10.1016/j.jenvman.2006.05.008

Quiroga Zuluaga, Marcela. 2015. Las políticas coloniales y la acción indígena: la configuración de los pueblos de indios de la provincia Páez, siglos XVII y XVIII. *Anuario Colombiano de Historia Social y de la Cultura* 42, 1: 23-50. https://doi.org/10.15446/achsc.v42n1.51341

Ramírez Silva, María and Vidal, Liliana. 2003. *Conflicto social armado y efectos ambientales en la Orinoquia*. http://www.foronacionalambiental.org.co/wp-content/uploads/2011/11/Ramirez-Conflicto*Orinoquia*.pdf

Rampf, David and Chavarro, Diana. 2014. The 1991 Colombian National Constituent Assembly - Turning Exclusion into Inclusion, or a Vain Endeavour? *Inclusive Political Settlements Paper* 1. Berlin: Berghof Foundation. www.berghof-foundation.com/www.ips-project.org

Rasmussen, Mattias and Lund, Christian. 2018. Reconfiguring Frontier Spaces: The territorialisation of resource control. *World Development* 101 C: 388-399. http://dx.doi.org/10.1016/j.worlddev.2017.01.018

Ratajczyk, Elicia, Ute Brady, Jacopo Baggio, A. Barnett, Irene Perez-Ibarra, Nathan Rollins, Cathy Rubiños, et al. 2018. Supplementary Material for Challenges and Opportunities in Coding the Commons: Problems Procedures, and Potential Solutions in Large-N Comparative Case Studies. *OSF*. April 13. https://doi.org/.10.17605/OSF.IO/FHKC8.

Ratajczyk, Elicia; Brady, Ute Baggio, Jacopo; Barnett, Allain; Perez-Ibarra, Irene; Rollins, Nathan; Rubiños, Cathy; Shin, Hoon; Yu, David; Aggarwal, Rimjhim; Anderies, John and Janssen, Marcus. 2016. Challenges and opportunities in coding the commons: problems, procedures, and potential solutions in large-N comparative case studies. *International Journal of the Commons* 10, (2):440-466. http://doi.org/10.18352/ijc.652

Rausch, Jane. 2009. Petroleum and the Transformation of the Llanos Frontier in Colombia: 1980 to the Present. *Latin Americanist* 53, 1: 113-36. https://doi.org/10.1111/j.1557-203X.2009.01011.x

Reichel-Dolmatoff, G. 1976. Cosmology as ecological analysis. *Man* 11, 3: 307-318. http://web.mnstate.edu/robertsb/380/cosmologyecological.pdf

Ribot, Jesse, Agrawal, Arun and Larson, Anne. 2006. Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Development* 34, 11: 864-1886. https://doi.org/10.1016/j.worlddev.2005.11.020

Richardson, Benjamin. 2008. The Ties that Bind: Indigenous peoples and Environmental Governance. *Comparative Research in Law & Political Economy* 26. http://digitalcommons.osgoode.yorku.ca/clpe/197

Rights and Resources Initiative (RRI). 2016. *Toward a Global Baseline of Carbon Storage in Collective Lands. An updated analysis of Indigenous peoples' and local communities' contributions to climate change mitigation.* http://rightsandresources.org/wp-content/uploads/2016/10/Toward-a-Global-Baseline-of-Carbon-Storage-in-Collective-Lands-November-2016-RRI-WHRC-WRI-report.pdf

Rivera, M. Amézquita, E; Bernal, H. and Rao, I. 2013. Las Sabanas de los Llanos Orientales de Colombia: Caracterización Biofísica e Importancia para la Producción Agropecuaria. In: Amézquita, Edgar; Rao, Idupulapati Rivera, Mariela; Corrales, Irlanda y Bernal, Jaime (Eds). *Sistemas agropastoriles: Un enfoque integrado para el manejo sostenible de Oxisoles de los Llanos Orientales de Colombia.* Cali, CO: Centro Internacional de Agricultura Tropical (CIAT) ; Ministerio de Agricultura y Desarrollo Rural (MADR) de Colombia. Corporación Colombiana de Investigación Agropecuaria (Corpoica).

Rivera Coba, Jaime. 2013. *La guerra civil de 1895 en Casanare.* Bachelor thesis. Pontificia universidad javeriana, Bogotá, Colombia. https://repository.javeriana.edu.co/bitstream/handle/10554/14301/RiveraCobaJaimeWilson2013.pdf?sequence=1

Rivera Cusicanqui, Silvia. 2012. *Ch'ixinakax utxiwa*: A Reflection on the Practices and Discourses of Decolonization. *South Atlantic Quarterly* 111, 1: 95-109. https://doi.org/10.1215/00382876-1472612

Rivero, Salomón; Morey Nancy and Morey Robert. 1980. Etnología contemporánea. In: Walter Coppens ed., *Los aborígenes de Venezuela I.* Caracas: La Salle. http://flasa.msinfo.info/portal/bases/biblo/texto/aborigenes_venezuela_Vol_3_m35.pdf

Robinson, Cathy and Lane, Marcus. 2013. Boundary-Riding: Indigenous Knowledge Contributions for Natural Resource Decision Making in Northern Australian Regions. In: Walker, Ryan; Jojola, Ted and Natcher, David (Eds). *Reclaiming indigenous planning.* Montreal: McGill-Queen's University Press.

Rodd, Robin and Sumabila, Arelis. 2011. Yopo, Ethnicity and Social Change: A Comparative Analysis of Piaroa and Cuiva Yopo Use. *Journal of Psychoactive Drugs* 43, 1: 36-45. http://dx.doi.org/10.1080/02791072.2011.566499

Rodgers, Gerry; Lee, Eddy and Van Daele, Jasmin. 2009. *The International Labour Organisation and the quest for social justice, 1919-2009*. International labour office. - Geneva: ILO. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_104643.pdf

Rodríguez Cuadros, José. 2015. *Génesis, actores y dinámicas de la violencia política en el Pacífico nariñense.* Bogotá: Odecofi-Cinep, Pontificia Universidad Javeriana.

Rodríguez, Gloria-Amparo. 2011. Proyectos y conflictos en relación con la consulta previa. *Opinión Jurídica 10,* 20: 57-72. https://revistas.udem.edu.co/index.php/opinion/article/view/734

Rodríguez, Gloria-Amparo. 2014. *De la Consulta Previa Al Consentimiento Libre, Previo e Informado a Pueblos Indígenas en Colombia*. Bogotá: Universidad del Rosario, GIZ. https://ssrn.com/abstract=2592988 or http://dx.doi.org/10.2139/ssrn.2592988

Rodríguez-Piñero, Luis. 2005. *Indigenous peoples, post-colonialism and international law: The ILO regime 1919-1989*. Oxford: Oxford University Press.

Roldán Ortega, Roque. 1995. Aproximación histórica a la explotación de petróleo en territorios indígenas. In: Roldán Ortega, Roque; Sánchez, Enrique and Castano, Sandra (Eds). *Tierra profanada: grandes proyectos en territorios indígenas de Colombia.* Proyecto ONIC-CECOIN-GhK. Bogotá: Disloque Ed.es.

Roldán Ortega, Roque; Sánchez, Enrique and Castano, Sandra (Eds). 1995. *Tierra profanada: grandes proyectos en territorios indígenas de Colombia.* Proyecto ONIC-CECOIN-GhK. Bogotá: Disloque Ed.es.

Romero-Ruíz, Milton. 2011. *Influence of land use, climate and topography on the fire regime in the Eastern Savannas of Colombia.* Ph.D. dissertation, University of Leicester, Leicester, England. http://hdl.handle.net/2381/9605

Romero-Ruíz, Milton; Etter, Andres, Sarmiento, A; Tansey, K. 2010. Spatial and temporal variability of fires in relation to ecosystems, land tenure and rainfall in savannas of northern South America. *Global Change Biology* 16: 2013-2023.https://doi.org/10.1111/j.1365-2486.2009.02081.x

Romero-Ruíz, Milton; Flantua, S; Tansey, K; Berrio, J. 2012. Landscape transformations in savannas of northern South America: Land use/cover changes since 1987 in the Llanos Orientales of Colombia. *Applied Geography* 32: 766-776. https://dx.doi.org/10.1016/j.apgeog.2011.08.010

Roncancio Guerrero, Daniel; Vega Gonzalez, Enrique and Herrera Chitiva, Gustavo. 1998. *Guía para Plantaciones forestales comerciales Orinoquia.* Conif. Serie de documentación N. 38. Bogotá: CONIF, Ministerio del Medio ambiente, Organización internacional de Maderas Tropicales OIMT.

Rowlands Narváez, Jorge. 2013. Estados latinoamericanos frente a la consulta indígena: Tensión cultural en la implementación de los derechos territoriales. In: Martí i Puig, Salvador; Wright, Claire; Aylwin, José and Yáñez, Nancy; Ayuso, Anna; Inguanzo, Isabel; Linares, Sebastián; Rowlands Narváez, Jorge; Tricot, Víctor; Villalba Portillo, Sara (Eds). *Entre el desarrollo y el buen vivir. Recursos naturales y conflictos en los territorios indígenas*. Madrid: Ed.ial Catarta.

Rozo, Esteban and Del Cairo, Carlos. 2017. Indigenismo desarrollista: Estado y diferencia cultural en una frontera amazónica 1959-1980. *Historia Crítica* n. 65: 163-182. https://dx.doi.org/10.7440/histcrit65.2017.08

Ryan, Roberta and Woods, Ronald. 2017. Decentralization and Subnational Governance: Theory and Praxis. In: Schoburgh, Eris and Ryan, Roberta. *Handbook of Research on Sub-National Governance and Development.* Advances in Electronic Government, Digital Divide, and Regional Development.

Sala, Serenella; Ciuffo, Biagio and Nijkamp, Peter. 2015. A systemic framework for sustainability assessment. *Ecological Economics* 119: 314-325.https://doi.org/10.1016/j.ecolecon.2015.09.015

Samudio Aizpurúa, Edda. 1995. Proceso de poblamiento y asignación de resguardos en los Andes venezolanos. *Revista Complutense de Historia de América* 21: 167-208.

Sanchez-Cuervo, Ana; Aide, Mitchel; Clark, Matthew and Etter, Andrés. 2012. Land cover change in Colombia: surprising forest recovery trends between 2001 and 2010. *PLoS One* 7, 8, p. e43943. https://doi.org/10.1371/journal.pone.0043943

Sandoval Forero, Eduardo. 2009. *Resistencia pacífica-activa de los Indígena Nasa en Colombia. XXVII Congreso de la Asociación Latinoamericana de Sociología.* VIII Jornadas de Sociología de la Universidad de Buenos Aires. Asociación Latinoamericana de Sociología, Buenos Aires. http://cdsa.aacademica.org/000-062/2275.pdf

Santamaría Chavarro, Ángela. 2013. Lorenzo Muelas y el constitucionalismo indígena "desde abajo": una retrospectiva crítica sobre el proceso constituyente de 1991. *Colombia Internacional* 79: 77-120.http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-56122013000300004&lng=en&tlng=.

Santos, Boaventura de Sousa and Avritzer, Leonardo. 2005. Introduction. Opening up the canon of democracy. In: Santos (Eds). *Democratizing democracy: beyond the liberal democratic canon*. Londres: Verso. http://www.boaventuradesousasantos.pt/media/Introduction(1).pdf

Santos, Boaventura de Sousa and Exeni Rodríguez, José. 2010. *Justicia indígena, plurinacionalidad e interculturalidad en Bolivia.* La Paz: Fundación Rosa Luxemburg/Abya-Yala. http://www.boaventuradesousasantos.pt/media/Justicia%20ind%C3%ADgena%20Bolivia.pdf

Santos, Boaventura de Sousa. 2010. *Refundación del Estado en América Latina. Perspectivas desde una epistemología del Sur*. Lima: Instituto Internacional de Derecho y Sociedad

Santos-Granero, Fernando. 2004. Escribiendo la historia en el paisaje: espacio, mitología y ritual entre la gente Yanesha. In: Surrallés, Alexandre and García Hierro, Pedro. Tierra Adentro. *Territorio indígena y percepción del entorno.* Skive, Denmark: International work group for indigenous affairs (IWGIA).

Schlager, Edella. 2016. Introducing the "The Importance of Context, Scale, and Interdependencies in Understanding and Applying Ostrom's Design Principles for Successful Governance of the Commons". *International Journal of the Commons 10,* 2: 405-416. http://doi.org/10.18352/ijc.767

Schleicher, Judith; Peres, Carlos; Amano, Tatsuya; Llactayo, William and Leader-Williams, Nigel. 2017. Conservation performance of different conservation governance regimes in the Peruvian Amazon. *Scientific Reports* 7, 11318. https://doi.org/10.1038/s41598-017-10736-w

Schroeder, Natalia and Castillo, Alicia. 2013. Collective Action in the Management of a Tropical Dry Forest Ecosystem: Effects of Mexico's Property Rights Regime. *Environmental Management* 51, 4: 850-61. https://doi.org/10.1007/s00267-012-9980-9

Seale, Clive. 1999. Quality in Qualitative Research. *Qualitative Inquiry 5,* 4: 465-478. https://doi.org/10.1177/107780049900500402

Segato, Rita. 2014. El sexo y la norma: frente estatal, patriarcado, desposesión, colonidad. *Revista Estudos Feministas* 22 (2): 593-616. https://dx.doi.org/10.1590/S0104-026X2014000200012

Semper, Frank. 2006. Los derechos de los pueblos indígenas de Colombia en la jurisprudencia de la Corte Constitucional. In: Woischnik, Jan (Ed.). *Anuario de Derecho Constitucional Latinoamericano.* Montevideo: Konrad-Adenauer-Stiftung E.V. https://www.kas.de/c/document_library/get_file?uuid=871a16c7-57d7-7755-f0be-a36421a780e3&groupId=271408

Serje de la Ossa, Margarita. 2006. Geopolítica de la ocupación territorial de la nación en Colombia. *Gestión y Ambiente* 9, 3: 21-27. https://revistas.unal.edu.co/index.php/gestion/article/view/49674/50540

Servicio geológico colombiano (SGC). 2014. *Estudios de cartografía geológica a escala 1.100.000 bloque 8 en el Vichada. Memoria explicativa. Plancha 233 - Orocué.* Informe técnico. http://recordcenter.sgc.gov.co/B14/23008010024696/Documento/Pdf/2105246961101000.pdf

SESMAD. 2014. *Social-Ecological Systems Meta-Analysis Database: Background and Research Methods*. Database. http://sesmad.dartmouth.edu/

Shepard, Glenn; Rummenhoeller, Klaus; Ohl-Schacherer, Julia and Yu, Douglas. 2010. Trouble in Paradise: Indigenous Populations, Anthropological Policies, and Biodiversity Conservation in Manu National Park, Peru. *Journal of Sustainable Forestry* 29, 2-4. https://doi.org/10.1080/10549810903548153

Siegle, Joseph and O'Mahony, Patrick. 2006. Assessing the Merits of Decentralization as a Conflict Mitigation Strategy. Consultancy report for the revision of the Decentralization and Democratic. *Local Governance Programming Handbook* Washington D.C.: USAID. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.110.9823&rep=rep1&type=pdf

Sierra, Carlos; Mahecha, Miguel; Poveda, Germán; Álvarez-Dávila, Esteban; Gutierrez-Velez, Víctor; Reu, Björn; Feilhauer, Hannes et al. 2017. Monitoring Ecological Change during Rapid Socio-Economic and Political Transitions: Colombian Ecosystems in the Post-Conflict Era. *Environmental Science & Policy* 76: 40-49. https://doi.org/10.1016/j.envsci.2017.06.011

Sirén, Anders. 2006. Natural resources in Indigenous peoples' land in Amazonia: A tragedy of the commons? *The International Journal of Sustainable Development and World Ecology* 13,5: 363-374. https://doi.org/10.1080/13504500609469686

Siroky, David and Cuffe, John. 2015. Lost Autonomy, Nationalism and Separatism. *Comparative Political Studies* 48, 1: 3-34. https://doi.org/10.1177/0010414013516927

Sletto, Bjørn; Bryan, Joe; Torrado, Marla; Hale, Charles and Barry, Deborah. 2013. Territorialidad, mapeo participativo y política sobre los recursos naturales: la experiencia de América Latina. *Cuadernos de Geografía: Revista Colombiana de Geografía 22,* 2: 193-209. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-215X2013000200011&lng=en&tlng=es

Smith, David. 2014. Minority Territorial and Non-Territorial Autonomy in Europe: Theoretical Perspectives and Practical Challenges. In: Kantor, Z. ed. *Autonomies in Europe: Solutions and Challenges*. Budapest: L'Harmattan.

Smith, Eric and Wishnie, Mark. 2000. Conservation and subsistence in small-scale societies. *Annual Review of Anthropoly* 29: 493-524. http://faculty.washington.edu/stevehar/SmithWishnie2000.pdf

Smith, Linda. 1999. *Decolonizing Methodologies. Research and Indigenous peoples*. Malaysia: Twelfth impression, 2008.

Solano de las Aguas, Sergio and Flórez Bolívar, Roicer. 2009. Indígenas, mestizaje, tierras y poder en el Caribe Colombiano, siglo XIX. *Indiana* 26: 267-295. http://www.redalyc.org/articulo.oa?id=247016492014

Steffen, Will; Richardson, Katherine; Rockström, Johan; Cornell, Sarah; Fetzer, Ingo; Bennett, Elena; Biggs, Reinette et al. 2015. Planetary Boundaries: Guiding Human Development on a Changing Planet. *Science* 347, 6223: 1259855. https://doi.org/10.1126/science.1259855

Stevens, Stan. 2013. National Parks and ICCAs in the High Himalayan Region of Nepal: Challenges and Opportunities. *Conservation and Society* 11, 1: 29-45.

Stroschein, Sherrill. 2015. Reconfiguring State-Minority Negotiations for Better Outcomes. In: Malloy, Tove; Osipov, Alexander and Vizi, Balázs. *Managing Diversity through Non-Territorial Autonomy: Assessing Advantages, Deficiencies, and Risks*. Oxford: Oxford University Press.

Suárez, Esteban; Morales, M., Cueva, R., Utreras Bucheli, V., Zapata-Ríos, G., Toral, E., Torres, J., Prado, W. and Vargas Olalla, J. 2009. Oil industry, wild meat trade and roads: indirect effects of oil extraction activities in a protected area in north-eastern Ecuador. *Animal Conservation* 12: 364-373. https://doi.org/10.1111/j.1469-1795.2009.00262.x

Suksi, Markku. 2011. *Sub-State Governance through Territorial Autonomy. A Comparative Study in constitutional Law of Powers, Procedures and Institutions*. Berlin: Springer. https://doi.org/10.1007/978-3-642-20048-9

Tamburini, Leonardo. 2012. La jurisdicción indígena y las autonomías indígenas. In: Santos, Boaventura and Exeni Rodríguez, José. *Justicia indígena, plurinacionalidad e interculturalidad en Bolivia*. Quito: Ediciones Abya Yala y Fundación Rosa Luxemburg. http://www.boaventuradesousasantos.pt/media/Justicia%20ind%C3%ADgena%20Bolivia.pdf

Tapia Mealla, Luis. 2006. *La invención del núcleo común: ciudadanía y gobierno multisocietal*. La Paz, Bolivia: Muela del Diablo Ed.es. http://bibliotecavirtual.clacso.org.ar/Bolivia/cides-umsa/20120831043520/tapia.pdf

Temper, Leah. 2019. Blocking Pipelines, Unsettling Environmental Justice: From Rights of Nature to Responsibility to Territory. *Local Environment* 24, 2: 94-112. https://doi.org/10.1080/13549839.2018.1536698

Terborgh, Jhon. 2000. The Fate of Tropical Forests: a Matter of Stewardship. *Conservation Biology* 14, 5: 1358-1361. https://doi.org/10.1046/j.1523-1739.2000.00136.x

Ternström, Ingela; Mukhopadhyay, Pranab & Ghate, Rucha. 2010. Sustainability, autonomy, and benefits from forest commons. *Proceedings of the National Academy of Sciences of the United States of America* 107, 14, E52-E53. https://doi.org/10.1073/pnas.1000051107

The Cocoyoc Declaration. 1975. *World Development*. 3, Nos. 2 & 3. February-March: 141-148. https://doi.org/10.1016/0305-750X7590044-3

Thiel, Andreas; Adamseged, Muluken and Baake, Carmen. 2015. Evaluating an instrument for institutional crafting: How Ostrom's social-ecological systems framework is applied. *Environment science and Policy* 53, Part B: 152-164. https://doi.org/10.1016/j.envsci.2015.04.020

Thom, Brian. 2014. Reframing Indigenous Territories: Private Property, Human Rights and Overlapping Claims. *American Indian Culture and Research Journal* 38, 4: 3-28. https://doi.org/10.17953/aicr.38.4.6372163053512w6x

Tirado Mejía, Álvaro. 1970. La tierra en Colombia. *Revista de la Universidad Nacional* 7: 93-188. http://revistas.unal.edu.co/index.php/revistaun/article/viewFile/11915/12539

Tkacik, Michael. 2008. Characteristics of forms of autonomy. *International Journal on Minority and Group Rights* 15: 369-401. http://doi.org/10.1163/157181108X332668

Tockman, Jason and Cameron, John. 2014. Indigenous Autonomy and the Contradictions of Plurinationalism in Bolivia. *Latin American Politics and Society* 56, 3. www.jstor.org/stable/43284913.

Toto, Rudina. 2018. *Ecosystem-Based Governance of Forest Commons. The Case of Shkumbini River Basin, Albania.* Ph.D. dissertation. Ferrara University - POLIS University, Ferrara, Italy. Unpublished.

Tribunal superior del distrito judicial de Bogotá (TSDJB). 2016. Sala de justicia y paz. Alexandra Valencia Molina. *Estructura paramilitar del bloque centauros y héroes del llano y del Guaviare.* Bogotá, July 25th.

Trujillo, Andrés; Suarez, Cesar; Usma, José; Trujillo, Fernando; Bravo, Andrés; Córdoba, Mireya; Villa, Francisco; Yara, Claudia; Ayala, Luz; Acosta; Andrés; Alfaro; Juan; Castillo, Luis; Garavito, Julieta; Urbano, Alexander; Zamudio, Jeisson; Pena, Jaider; Vergel, Doriella; Combariza, Ricardo and Cuellar, Jorge. 2011. Ecosistemas Estratégicos del Casanare: áreas de alto valor de conservación. In: Usma, José and Trujillo, Fernando (Eds). Biodiversidad del Casanare: Ecosistemas Estratégicos del Departamento. Bogotá: Gobernación de Casanare - WWF Colombia. http://www.bdigital.unal.edu.co/6640/

Truman, Harry. 1949. *Inaugural Address.* https://www.trumanlibrary.org/whistlestop/50yr_archive/inagural20jan1949.htm

Ugarte, Magdalena. 2014. Ethics, Discourse, or Rights? A discussion about a decolonizing Project in Planning. *Journal of Planning Literature* 29, 4: 403-414. https://doi.org/10.1177/0885412214549421

Ullán de la Rosa, Francisco. 2004. La era del caucho en el amazonas (1870-1920): modelos de explotación y relaciones sociales de producción**.** *Anales del museo de américa* 12: 183-204. https://dialnet.unirioja.es/servlet/articulo?codigo=1180459

Ulloa Cubillos, Astrid. 2010. Reconfiguraciones conceptuales, políticas y territoriales en las demandas de autonomía de los pueblos indígenas en Colombia. *Tabula Rasa* 13: 73-92. http://www.scielo.org.co/pdf/tara/n13/n13a04.pdf

Ulloa Cubillos, Astrid. 2011. The Politics of Autonomy of Indigenous peoples of the Sierra Nevada de Santa Marta, Colombia: A Process of Relational Indigenous Autonomy. *Latin American and Caribbean Ethnic Studies* 6, 1: 79-107. https://doi.org/10.1080/17442222.2011.543874

Ulloa Cubillos, Astrid. 2017. Perspectives of Environmental Justice from Indigenous peoples of Latin America: A Relational Indigenous Environmental Justice. *Environmental Justice* 10, 6: 175-80. https://doi.org/10.1089/env.2017.0017

Carrizosa Umaña, Julio. 2014. *Colombia compleja*. Jardín Botánico de Bogotá José Celestino Mutis. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. https://redjusticiaambientalcolombia.files.wordpress.com/2014/07/colombia-compleja.pdf

Unceta Satrústegui, Koldo. 2009. Desarrollo, subdesarrollo, maldesarrollo y postdesarrollo. Una mirada transdisciplinar sobre el debate y sus implicaciones. *Carta Latinoamericana* 7: 1-34. http://globalizacion.org/wp-content/uploads/2016/01/CartaLat07UncetaDesarrollo2009.pdf

Unidad Administrativa Especial de Gestión de Restitución de Tierras Despojadas (URT). 2017. *Informe de Gestión 2017*.

Unidad Administrativa Especial de Gestión de Restitución de Tierras Despojadas (URT). 2018. *Sentencias Étnicas*. Database. https://www.datos.gov.co/Agricultura-y-Desarrollo-Rural/Sentencias-Etnicas/4366-em54

Unidad de Restitución de Tierras (URT). 2015. *Unidad de Restitución presentó demanda a favor de comunidad indígena de Kanalitojo, de Puerto Carreño Vichada*. https://www.restituciondetierras.gov.co/inicio?p_p_id=101&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&_101_struts_action=%2Fasset_publisher%2Fview_content&_101_returnToFullPageURL=%2F&_101_assetEntryId=529937&_101_type=content&_101_urlTitle=unidad-de-restitucion-presento-demanda-a-favor-de-comunidad-indigena-de-kanalitojo-de-puerto-carreno-vichada-&inheritRedirect=true

United Nations (UN). 1949. *Resolution 275 (1949). Study of the social problems of the aboriginal populations and other under-developed social groups of the American continent*. http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/275 III

United Nations (UN). 2009. *State of the World's Indigenous peoples. ST/ESA/328*. Permanent Forum on Indigenous Issues UNPFII. http://www.un.org/esa/socdev/unpfii/documents/SOWIP/en/SOWIP_web.pdf

United Nations (UN). 2012. *The future we want*. Resolution adopted by the General Assembly on 27 July 2012. http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_66_288.pdf

United Nations (UN). 2014. *World Urbanization Prospects: The 2014 Revision, Highlights ST/ESA/SER.A/352*. https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.pdf

United Nations (UN). 2015. *Transforming our world: the 2030 Agenda for Sustainable Development*. https://sustainabledevelopment.un.org/post2015/transformingourworld

United Nations (UN). 2018. Decision adopted by the conference of the parties to the convention on biological diversity. Integration of Article 8(j) and provisions related to Indigenous peoples and local communities in the work of the convention and its Protocols. CBD/cop/dec/14/17. https://www.cbd.int/doc/decisions/cop-14/cop-14-dec-17-en.pdf

United Nations Habitat (UN-Habitat). 2017. *Implementing the New Urban Agenda by Strengthening Urban-Rural Linkages - Leave No One And No Space Behind*. Nairobi: UN-Habitat. https://unhabitat.org/implementing-the-new-urban-agenda-by-strengthening-urban-rural-linkages

Universidad Nacional de Colombia (UNAL). 2012. *Estructuras de Autodefensas y Proceso de Paz en Colombia*. Observatorio de Procesos de Desarme, Desmovilización y Reintegración (ODDR). http://www.humanas.unal.edu.co/observapazyconflicto/files/4814/3594/1011/informeestructurasdeautodefensasyprocesode__pazen_colombia_version15_02_12_final.pdf

Uprimny Yepes, Rodrigo N.D *Should Courts enforce social rights? The Experience of the Colombian Constitutional Court*. https://www.dejusticia.org/wp-content/uploads/2017/04/fi_name_recurso_67.pdf

Valderrama González, María. 2016. Límites de la gobernanza en territorio indígena: Representaciones y discursos alrededor del ordenamiento territorial en la Sierra Nevada de Santa Marta Colombia. Ph.D. dissertation, Ecole des Hautes Etudes en Sciences Sociales EHESS, Paris, France. https://tel.archives-ouvertes.fr/tel-01472501/document

Vallance, Suzanne; Perkins, Harvey; Dixon, Jennifer. 2011. What is social sustainability? A clarification of concepts. *Geoforum* 42: 342-348. http://doi.org/10.1016/j.geoforum.2011.01.002

Van Cott, Donna. 2000. Latin America: Constitutional Reform and Ethnic Right. *Parliamentary affairs* 53, 1: 41-54. https://doi.org/10.1093/pa/53.1.41

Van der Hammen, Thomas and Andrade, Germán. 2003. *Estructura ecológica principal de Colombia: primera aproximación. (Documento técnico)*. Bogotá: Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM).

Van de Sandt, Joris. 2007. *Behind the mask of recognition: defending autonomy and communal resource management in indigenous resguardos, Colombia*. Ph.D. dissertation, University of Amsterdam, Amsterdam, Netherlands. http://hdl.handle.net/11245/1.309223

Van Dorp, Mark; Rácz, Kristóf; Karlijn Kuijpers; Salinas Abdala, Yamile and Álvarez Roa, Paula. 2015. *Reconquista y despojo en la Altillanura. El caso de Poligrow en Colombia*. SOMO, INDEPAZ. https://www.somo.nl/wp-content/uploads/2015/11/El-caso-Poligrow-en-Colombia-Espa%C3%B1ol-Mayo-2017.pdf

Vasilachis de Gialdino, Irene. 2009. Ontological and Epistemological Foundations of Qualitative Research. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 10, 2. http://www.qualitative-research.net/index.php/fqs/article/view/1299

Verdadabierta.com. 2009. *Bloque Centauros*. February 3. https://verdadabierta.com/bloque-centaruros

Vieco Albarracín, Juan; Franky, Carlos; Echeverri, Juan (Eds). 2000. *Simposio [sobre] Territorialidad Indígena y Ordenamiento en la Amazonia. Territorialidad indígena y ordenamiento en la Amazonia: memorias*. Bogotá: Universidad Nacional de Colombia, UNIBIBLOS. http://bdigital.unal.edu.co/10064/6/9588051851.pdf

Villa Rincón, William and Houghton, Juan. 2004. *Violencia política contra los pueblos indígenas en Colombia. 1974-2004*. Bogotá: CECOIN. OIA. IWGIA. http://observatorioetnicocecoin.org.co/cecoin/files/VIOLENCIA%20POLITIICA.pdf

Viveiros de Castro, Eduardo. 2004. Perspectivismo y multinaturalismo en la América indígena. In: Surrallés, Alexandre and García Hierro, Pedro. *Tierra Adentro. Territorio indígena y percepción del entorno*. Skive, Denmark: International work group for indigenous affairs (IWGIA). https://www.iwgia.org/images/publications//0331_tierra_adentro.pdf

Walsh, Catherine. 2008. Interculturalidad, plurinacionalidad y decolonialidad: las insurgencias político-epistémicas de refundar el Estado. *Tabula Rasa 9*: 131-152. http://www.redalyc.org/articulo.oa?id=39600909

Webster, Rebecca. 2016. This land can sustain us: cooperative land use planning on the Oneida Reservation. *Planning Theory & Practice* 1: 9-34. https://doi.org/10.1080/14649357.2015.1135250

World Bank (WB). 2018. *Project appraisal document on a proposed BIOCF plus initiative grant for a sustainable low -carbon development in Orinoquia region project*. http://documents.worldbank.org/curated/en/163981543530927511/Disclosable-Restructuring-Paper-Sustainable-Low-Carbon-Development-in-*Orinoquia*-region-Project-P160680

Xanthaki, Alexandra. 2009. Indigenous rights in international law over the last 10 years and future developments. *Melbourne Journal of International Law* 10(1), *27*. http://www.austlii.edu.au/au/journals/MelbJIL/2009/3.html#fnB23

Yepes, T. et al. 2019. *Política General de Ordenamiento Territorial. Propuesta final. Documento técnico y normativo para la elaboración de la Política General de Ordenamiento Territorial.* Bogotá: Fedesarrollo. https://www.repository.fedesarrollo.org.co/handle/11445/3789

Yin, Robert. 2009. *Case Study Research. Design and Methods.* California: Sage. Fourth Edition. https://doi.org/10.1111/j.1467-7660.2009.01540_5.x

Yusta-García, Raúl; Orta-Martínez, Martí; Mayor, Pedro; González-Crespo, Carlos and Rosell-Melé, Antoni. 2017. Water Contamination from Oil Extraction Activities in Northern Peruvian Amazonian Rivers. *Environmental Pollution* 225: 370-80. https://doi.org/10.1016/j.envpol.2017.02.063

Zaferatos, Nicholas. 1998. Planning the Native American Tribal Community: understanding the Basis of Power Controlling the Reservation Territory. J*ournal of the American Planning Association* 64 4: 395-410. : https://doi.org/10.1080/01944369808976000

Zaferatos, Nicholas. 2004. Developing an effective approach to strategic planning for native American Indian reservations. *Space and Polity* 8,1: 87-104. https://doi.org/10.1080/13562570410001678824

Zapata Torres, Jair. 2010. *Espacio y territorio sagrado. Lógica del ordenamiento territorial indígena.* Master thesis, Universidad nacional de Colombia, Bogotá, Colombia. https://issuu.com/carloslopezpiedrahita/docs/libroespacioyterritorio24_03_10

Zeilhofer, Peter; Cezar, Adelaine; Tôrres, Natália; Almeida Jácomo, Anah; and Silveira, Leandro. 2014. Jaguar *Panthera onca* Habitat Modeling in Landscapes Facing High Land-use Transformation Pressure - Findings from Mato Grosso, Brazil. *Biotropica* 46: 98-105. https://doi.org/10.1111/btp.12074

Ziai, Aram. 2007. The ambivalence of post-development: between reactionary populism and radical democracy. In: Ziai, Aram ed. *Exploring Post-Development Theory and practice, problems and perspectives.* Routledge: New York.

13 APPENDICES

13.1 Appendix A

- The emergence of ILO convention 107

In 1957, ILO convention on indigenous populations appeared as the first international instrument regarding Indigenous peoples' rights. Nevertheless, several elements can be identified as precursors that led to the consideration of Indigenous peoples' rights as an international concern. One of the first visible actions took place in 1923, when Chief Deskaheh from the Cayuga people and representative of the Six Nations of the Iroquois in North America, went to the League of Nations in Geneva (CEPAL 2014, 25; UN 2009, 2), to claim for the recognition of their independent right of home-rule, among other issues (Deskaheh 1923, 6). Although the Chief was not granted an audience by the League and could not return home afterwards; he found a receptive audience in the European media and general public (UN 2009, 2).

A second event took place three years later, representatives of the Maori people went to Geneva in 1925, to protest for the confiscation of lands in New Zealand. Although they failed to present the petition to the League of Nations, this contributed to persuade the New Zealand government, in 1926, to act on the issue of land confiscation (New Zealand ministry for culture and heritage, 2017). Nevertheless, other less internationally visible claims were made by Indigenous peoples in other places. In the American context, such claims were fostered by an increased pressure over Indigenous peoples during the second half of the 19th century, which, according to Pineda Camacho (2012), reached most of the continent, from the 'conquest' of the west in the United States to the 'conquest of the dessert' in Argentina. This made way to the emergence of Indigenismo by the end of the 19th century (Pineda Camacho 2012, 14), which would later play a role in the emergence of the ILO convention in 1957.

According to Pineda Camacho (2012), the meeting that took place in 1940 in the city of Pátzcuaro, Michoacán, Mexico, fostered the creation of the *Instituto indigenista interamericano* in 1942 and constituted the frame in which a 'new indigenous policy was born' (Pineda Camacho 2012, 11). The discussions in Pátzcuaro were focused in finding solutions for dealing with indigenous issues regarding land, language, health, autonomy, among other elements, which had different nuances between countries. They led to a declaration of principles in which a plea for the equality of rights and opportunities for all American population groups was made, as well as for the respect of the historical and cultural personality of indigenous groups, acknowledging that the problem of Indigenous peoples in America was related to the 'solidarity purposes asserted between all the peoples and governments of the world' (Pineda Camacho, 2012, p. 22). Parallelly, in the European context, the situation of ethnic and linguistic political demands made by 'national' groups were growing since the 18th century, while the equation of a nation with a culturally and language homogeneous population had become common (Hannum 1993, 3).

According to Lapidoth (1997), minorities were hardly protected before World War I. After this war, the rights of minorities began to be protected in Europe under the frame of 'minorities treaties', which, according to Hannum (1992), can be divided into three categories: treaties imposed on the defeated

states (Austria, Hungary, Bulgaria and Turkey, except Germany); treaties imposed on states newly recognised or with new frontiers (Czechoslovakia, Greece, Poland, Romania and Yugoslavia); and treaties or agreements creating special regimes in the Aland Islands, Danzig, the Memel Territory, and Upper Silesia (Hannum 1992, 7). Therefore, the issues regarding Indigenous peoples were not yet an international concern. Burguete Cal y Mayor (2010) suggests that World War II and the horror produced by the annihilation of culturally diverse groups of people considered inferior, led to further discussions about human rights, as well as the recognition of the rights of people belonging to ethnic, linguistic or religious groups that became minorities, given the circumstances of post-war (p. 68), which, according to the author, resulted in the approval or the convention on the prevention and punishment of the crime of genocide and the Universal declaration of human rights on the 9th and 10th of December 1948.

While the concern over minorities was developing in the European context, in the American context the discussions about indigenous, aboriginal, native groups did not include the concept of minorities. According to Barsh (1986), the first time that the United Nations system addressed indigenous issues was through Resolution 275 (1949) (p. 370), where the general assembly recommended to the economic and social council that *'with the assistance of the specialized agencies concerned and in collaboration with the Instituto indigenista American o, study the situation of the aboriginal populations and of the (…) under developed social groups of the States of the American continent requesting such help'* (UN 1949, 19). In parallel, the situation of 'native' workers in European colonies, including those in the Caribbean, was getting attention and was one of the motivations for the ILO to address their situation through the convention of 1957 (Ortiz Tirado 2014, 99). According to Rodgers et al. (2009), the initial concern of ILO with Indigenous peoples was a manifestation of 'its work in the pre-Second World War colonial context', which led ILO's realm of activity to include 'the duty of protection over 'indigenous workers' living in a *'lower scale of civilization'*, *both in formerly colonial territories and in post-colonial states'* (p. 86). Almost a decade later, in 1957, convention 107 aggregates ILO's concerns about workers and captures the ideas of the '*Indigenismo'* of that period (Aylwin 2014a, 25), resulting in an instrument that, despite being originated in labour-related concerns, covers a wide range of topics regarding education, health, lands, among others issues, which also set the background for future international instruments.

13.2 Appendix B

After its update of 2009, the SES framework was later reviewed by Ostrom and McGinnis (2014). The revised framework makes a clearer link to the institutional analysis and development framework. It changes the denomination of 'users' for 'actors' and brings closer the relation between interactions and outcomes as part of 'Focal action situations', where '*all the action takes place as inputs are transformed by the actions of multiple actors into outcomes'* (McGinnis and Ostrom 2014, 4). The table contains the version of the framework as proposed in 2014:

First-tier variable	Second-tier Variables
Social, economic, and political settings (S)	S1 Economic development
	S2 Demographic trends

	S3 Political stability
	S4 Other governance systems*
	S5 Markets *
	S6 Media organization
	S7 – Technology *
Resource systems (RS)	RS1 – Sector (e.g., water, forests, pasture, fish)
	RS2 – Clarity of system boundaries
	RS3 – Size of resource system
	RS4 – Human-constructed facilities
	RS5 – Productivity of system
	RS6 – Equilibrium properties
	RS7 – Predictability of system dynamics
	RS8 – Storage characteristics
	RS9 – Location
Governance systems (GS)	GS1 – Government organisations
	GS2 – Nongovernment organisations
	GS3 – Network structure
	GS4 – Property rights systems
	GS5 – Operational-choice rules *
	GS6 – Collective-choice rules
	GS7 – Constitutional-choice rules*
	GS8 – Monitoring and sanctioning rules *
Resource units (RU)	RU1 – Resource unit mobility
	RU2 – Growth or replacement rate
	RU3 – Interaction among resource units
	RU4 – Economic value
	RU5 – Number of units
	RU6 – Distinctive characteristics *
	RU7 – Spatial and temporal distribution
Actors (A) *	A1 – Number of relevant actors
	A2 – Socioeconomic attributes
	A3 – History or past experiences
	A4 – Location
	A5 – Leadership/entrepreneurship
	A6 – Norms (trust-reciprocity)/social capital
	A7 – Knowledge of SES/mental models
	A8 – Importance of resource (dependence)
	A9 – Technologies available
Action situations: Interactions (I) → Outcomes (O)	I1 – Harvesting * I2 – Information sharing I3 – Deliberation processes I4 – Conflicts I5 – Investment activities I6 – Lobbying activities I7 – Self-organising activities I8 – Networking activities

	I9 – Monitoring activities * I10 – Evaluative activities * O1 – Social performance measures (e.g., efficiency, equity, accountability) O2 – Ecological performance measures (e.g., overharvested, resilience, biodiversity, sustainability) O3 – Externalities to other SESs
Related ecosystems (ECO)	ECO1 – Climate patterns ECO2 – Pollution patterns ECO3 – Flows into and out of focal SES

Source: author's own compilation based on McGinnis and Ostrom (2014). The variables marked with * correspond to changes introduced to the version of 2009.

Excluded SESF Variables

Variable code	Variable name	Reason for exclusion
S5	Markets	The *resguardo* area cannot be transacted in the Land market. Inhabitants of the *resguardo* do not produce particular goods heavily determined by markets.
S6	Media organisations	No appreciable role of in the *resguardo.*
S7	Technology	Technological changes are addressed according to relevant sectors.
RS5	Productivity of the System	The scale of analysis corresponds to ecosystems, including agro-ecosystems, whose productivity cannot be assessed in this research. Some features are discussed in RS3 and I1.
RS8	Storage characteristics	The scale of analysis corresponds to ecosystems rather than single resource systems. Some features are discussed in RS3.
RU	Resource units	Same as above
I9	Monitoring activities	These are discussed in GS8
I10	Evaluative activities	No evaluative activities are conducted in the *resguardo.*
O1	Social performance measures	There was no available information on this subject.
O2	Ecological performance measures	There was no available information on this subject.
O3	Externalities to other SESs	The functioning of *El Duya* in relation to other SESs has been discussed in S4

Source: author's own compilation based on Nagendra and Ostrom (2014).

13.3 Appendix C

- Interview guidelines

1. *Ministry of culture. Direction of regional promotion*

Can you elaborate on the way this institution works with indigenous territories?

At what extent is environmental sustainability considered in the work of this institution with indigenous territories?

How is this institution addressing the content of decree 1953 (2014)?

What implications does more autonomy for Indigenous peoples have in the work of this institution?

What does the protection of 'sacred sites' consist of?

What implications do the work on 'sacred sites' have on a territorial level? Why?

What role do planning instruments in indigenous territories, like the life plan or organisational plan, for the work of this ministry?

What kind of interventions does this ministry have in indigenous territories in Orinoquia region?

Are you aware of any intervention in *El Duya*? If yes, can you elaborate on the situation of this *resguardo*?

At what extent can the current agenda of this institution be disturbed by the change in the government with the elections?

2. *Ministry of interior - Division of ethnic affairs*

Can you elaborate on the way this institution works with indigenous territories?

At what extent is environmental sustainability considered in the work of this institution?

How is this institution addressing the content of decree 1953 (2014)?

Why was *El Duya* included in the group of resguardos with organisational plans?

What are the practical implications of these plans?

Can you elaborate on how environmental sustainability goals are set for indigenous territories?

Who acts as environmental authorities in their territories? Why?

Do you think that more autonomy for Indigenous peoples may have an impact on sustainability aspects? Why?

How is this related to prior consultation?

Is this institution doing the follow up of the implementation of decree 1953 (2014)? If not, who?

Are you aware of any environmental concerns for *El Duya*?

At what extent can the current agenda of this institution regarding indigenous territories and autonomy be disturbed by the change in the government with the elections?

3. *Corporinoquia*

What role does Corporinoquia have regarding indigenous territories?

Are there current projects taking place in indigenous territories?

What are the environmental sustainability concerns in indigenous territories in *Orinoquia* region?

Are there differences between indigenous territories and others concerning the kind of environmental sustainability concerns in Orinoquia region?

How is land – use planning made in indigenous territories in *Orinoquia* region?

How are environmental sustainability goals set for indigenous territories?

Who acts as environmental authority in indigenous territories?

How is jurisdiction assigned regarding environmental sustainability in indigenous territories?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (2014) would be mentioned)

What kind of implications does more autonomy in indigenous territories have for the work of Corporinoquia?

Do you know *El Duya*? If yes, can you elaborate on the situation of the *resguardo* regarding environmental sustainability?

Does this institution have future projects that involve this *resguardo*?

According to your expertise, is there any relation between the type of ethnic group and environmental sustainability in the territory?

4. *Territorial entities: Department and Municipality*

What role does this entity have regarding Indigenous peoples?

What are the environmental sustainability concerns in indigenous territories?

How are these environmental sustainability concerns being addressed?

Can you elaborate on how is land – use planning made in indigenous territories in Casanare/Orocué?

Can you elaborate on how are environmental sustainability goals set for indigenous territories?

Who acts as environmental authority in indigenous territories?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (2014) would be mentioned)

What kind of implications does more autonomy in indigenous territories have for this entity?

What kind of implications does more autonomy in indigenous territories have for environmental sustainability?

Do you know *El Duya*? If yes, can you elaborate on the situation of this resguardo?

Does this institution have future projects that involve this resguardo?

5. *National indigenous organisation (ONIC), Permanent negotiation roundtable (MPC)*

Can you elaborate on how is this organisation working regarding nature related matters?

What are the current environmental problems in indigenous territories?

Are you aware of how these environmental problems are being addressed? By whom?

What role does indigenous autonomy have in addressing these problems?

Have there been any changes with the enactment of decree 1953 (2014)?

What implications does indigenous autonomy have for the environment?

Do you use the concept 'environmental sustainability'? Can you elaborate on this?

Is it possible to assess if an indigenous territory environmentally sustainable? How?

Do you know if there are environmental sustainability goals set for indigenous territories?

Who is currently acting as environmental authority in indigenous territories? How?

Can you elaborate on how is this related to autonomy?

Can you elaborate on how is this related to prior consultation?

What are the strengths of Indigenous peoples having autonomy regarding environmental sustainability?

Would you consider these strengths to be equal in all of the Indigenous peoples across the country? Can you elaborate?

What are the difficulties in exerting autonomy?

Can these difficulties hinder environmental sustainability? If yes, How?

In your opinion, what would be necessary for Indigenous peoples to ensure environmental sustainability in their territories?

What role do planning instruments have for environmental sustainability?

What role does land-use planning have in environmental sustainability?

Are planning instruments and indigenous knowledge contradictory? Can you elaborate?

Is there any relation between planning instruments and sacred sites protection? Can you elaborate?

Can you elaborate on the current situation of indigenous territories in *Orinoquia* region?

Can you elaborate on the situation of *El Duya*?

What do you think is necessary to ensure environmental sustainability in this *resguardo*?

6. *FNA, Etnollano*

Is the situation of indigenous territories the same across the country in terms of environmental sustainability? Why?

What role do planning instruments have in indigenous territories concerning environmental sustainability?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (2014) would be mentioned)

Can more autonomy for Indigenous peoples have an impact on environmental sustainability?

Who act as environmental authorities in their territories? Why?

How is this related to prior consultation?

Can autonomy for Indigenous peoples foster territorial conflicts? If yes, of what kind?

According to your expertise, how could potential conflicts be prevented?

What role does land-use planning have in environmental sustainability?

Are planning instruments and indigenous knowledge contradictory? Can you elaborate?

How are environmental sustainability goals set for indigenous territories?

According to your expertise, is there any relation between the type of ethnic group and environmental sustainability in the territory?

According to your expertise, are there any special aspects regarding indigenous territories that should be considered for the case of Orinoquia region? Why?

Do you know the *resguardo El Duya*? If yes, can you elaborate on the situation of the *resguardo*?

What role do indigenous territories have in the implementation of the ZIDRES?

At what extent can the agenda on indigenous territories and autonomy be disturbed by the change in the government with the elections?

Are you aware of any current research on indigenous territories and environmental sustainability?

7. *ASAISOC*

Can you elaborate on the way in which ASAISOC work?

Can you elaborate on how the Salia people understand nature?

In your opinion, what is the state of nature in the Salia territories?

How could it be better?

Who are responsible of making it better? Why?

Does ASAISOC work concerning nature?

Who acts as environmental authority in indigenous territories? How?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (2014) would be mentioned)

What does more autonomy mean for the Salia territories?

With more autonomy, does anything change in nature protection in the Salia territories?

What does the life plan stablish for the future of nature? Is it being done?

What are the current problems in the Salia territories?

How are you addressing these problems?

Which of the things that the Salia people are doing could be taken as an example for other Indigenous peoples?

What are the things that the Salia people should do better inside indigenous territories?

What else should be done? By whom?

8. *Government structure of El Duya*

Can you elaborate on how the Salia people understand nature?

Can you elaborate on how does the indigenous government in *El Duya* work?

In your opinion, how is the state of nature in *El Duya*?

How could it be better?

Who is responsible of making it better? Why?

Who acts as environmental authority in indigenous territories? How?

What are the difficulties involved in acting as an environmental authority in *El Duya*?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (20149 would be mentioned)

What does more autonomy mean for the people in *El Duya*?

With more autonomy, does anything change in nature protection?

What does the life plan stablish for the future of nature? Is it being done?

Is there any other instrument that is available for *El Duya*?

With more autonomy, how do relationships change with the municipality? The neighbours?

What are the current problems in *El Duya*?

How are you addressing these problems?

What are the things that the people inside *El Duya* should do better?

9. *Dwellers of El Duya*

Can you elaborate on how the Salia people understand nature?

In your opinion, how is nature in *El Duya*?

Has it changed over time?

Who are responsible of making it better? Why?

Are there rules regarding nature that people must comply with? Can you elaborate?

Who is responsible for the enforcement of the rules?

Who stablishes the rules? Have you ever participated?

Can the rules be changed? If yes, by whom?

Do the rules apply to people that is not living in *El Duya*?

What happens if someone infringes the rules?

Do you think that the people of *El Duya* respect nature? Can you elaborate?

Do you think that the government in *El Duya* can be considered as an environmental authority? Why?

Are you aware of any changes regarding autonomy in indigenous territories? (If no, decree 1953 (2014) would be mentioned)

With more autonomy, does anything change in the use of nature?

How has nature protection changed in the last years?

What do you think should be improved regarding nature use and protection?

Are you familiar with the life plan? If yes, do you know what it stablishes for the future of nature?

What are the current problems in El Duya?

What do you think is necessary to solve those problems?

What things do the people of *El Duya* are already doing well?

13.4 Appendix D

- List of interviewees

Institution	Interviewee	Date
Ministry of culture	Lucía Calderón	April, 2018
National indigenous organisation (ONIC)	Felipe Rangel Uncacía	April, 2018
	Elizabeth Apolinar	April, 2018
	Victoriano Joropa	May, 2018
Ministry of interior	Jorge Ospina, María Esperanza Ruíz, María Paula Espejo	May, 2018
Corporinoquia	Julie Angélica Páez Barreto	April, 2018
	Mercedes Galés	May, 2018
	Rafael Joropa	May, 2018
Department of Casanare	Maicol Castro Álvaro Alexander Álvarez	May, 2018
	Diana Carolina Ramírez	May, 2018
Municipal territorial planning council of Orocué	Juan Manuel Niño	May, 2018
Permanent concertation roundtable (MPC)	Gerardo Jumí Tapias	May, 2018
Etnollano NGO	Francisco Ortiz	May, 2018
National environmental forum (FNA)	Gloria Amparo Rodríguez	May, 2018
ASAIASOC	Ismael Joropa	May, 2018
	Clara Ines Guacabare	May, 2018

	Orlando Pónare	June, 2018
	Frandy Yabimay	June, 2018
Resguardo El Duya	Luis Maria Caribana Pónare	May, 2018
	Edelmira Pónare	May, 2018
	Federico Pónare	May, 2018
	Águeda Pumene	May, 2018
	Octavio Caribana	May, 2018
	Zoraida Pónare	May, 2018
	Flavio Caribana	May, 2018
	Rosalía Guacavare	May, 2018
	Heliodoro Caribana	May, 2018
	Rosa Yaneth Errenuma	May, 2018
	Benjamin Caribana	May, 2018
	Julian Caribana Pónare	June, 2018
	Damaris Pónare	June, 2018
	Luciano Pónare	June, 2018
	Aly Youl Joropa	June, 2018

13.5 Appendix E

- *Resguardos* overlapped by forest reserves

Abejero	*Guaco Bajo y Guaco Alto*	*Playas de Bojabá*
Aduche	*Guadual, Cumbas, Magüí, Invina Y Arrayán*	*Polindara*
Agua Negra	*Guadualito*	*Predio Putumayo*
Aguaclara y Bella Luz Del Río Amporá	*Guaguandó*	*Puadó, La Lerma, Mataré y Terdo*
Aguas Negras	*Gualcala*	*Pueblo Nuevo-Laguna Colorada*
Almidón La Ceiba	*Guambía*	*Puerto Alegre y La Divisa*
Altamira	*Guarando Carrizal*	*Puerto Chichiliano*
Alto Cartagena	*Guayacan-Santa Rosa*	*Puerto Córdoba*
Alto Del Río Munguidó	*Guelnambi-Caraño*	*Puerto Libia Tripicay*
Alto Río Bojayá	*Honda Río Guiza*	*Puerto Libre Del Río Pepé*
Alto Río Buey	*Hurtado Y Tegavera*	*Puerto Monforth*
Alto Río Cuia	*Inda Zabaleta*	*Puerto Nare*
Alto Río Tagachi	*Inga De Aponte*	*Puerto Nariño*
Alto Sinu, Esmeralda Cruz Grande E Iwagado	*Inga De Colon*	*Puerto Sabalo*
Ambaló	*Inga De San Andrés*	*Puerto Triunfo*
Amparrado Alto Y Medio Y Quebrada Chontaduro	*Integrado El Charco*	*Puerto Viejo Y Puerto Esperanza*

Andabá	*Iroka*	*Pulgande Campoalegre*
Andagueda	*Isla Del Mono*	*Puracé*
Angosturas	*Jagual Río Chintado*	*Quebrada Chicue Río Tangui*
Arara	*Jaikerazavi*	*Quebrada Grande*
Arara, Bacatí, Carurú Y Miraflores	*Jambaló*	*Quebrada Quera*
Arhuaco De La Sierra Nevada	*Jenaturadó*	*Quichaya*
Arrecifal	*Jengado Apartadó*	*Quizgo*
Awá Ñambl Piedra Verde	*Jericó-Consaya*	*Ramos-Mongon-Manchuria*
Bachaco Buenavista	*Jirijiri*	*Refugio El Sol*
Bajo Casacunte	*K 6 y 11 Carretera Leticia Tarapaca*	*Remanso - Chorro Bocon*
Bajo Grande	*Kaméntsá Biya De Sibundoy*	*Río Amé*
Bajo Río Guainia Y Rio Negro	*Kankuamo*	*Río Atabapo E Inírida*
Banderas Del Recaibo	*Karabijua*	*Río Bebara*
Barranco Colorado	*Kogui-Malayo Arhuaco*	*Río Bebarama*
Barranquillita	*Kokonuco*	*Río Chajeradó*
Bellavista-Unión Pitalito	*Kwet Wala (Piedra Grande)*	*Río Dagua*
Bete-Aurobete Y Auro Del Buey	*La Asuncion*	*Río Domingodo*
Blasiaku	*La Cilia O La Calera*	*Río Garrapatas*
Buchadó Amparradó	*La Cristalina*	*Río Icho y La Quebrada Baratudo*
Buenavista	*La Delfina*	*Río Jarapetó*
Burujon O La Unión-San Bernardo	*La Esperanza*	*Río La Playa*
Businchama	*La Floresta, Santa Rosa Y San Francisco*	*Río Murindó*
Cabeceras O Puerto Pizarío	*La Gaitana*	*Río Negua*
Cachivera De Nare	*La Jagua-Guachal-Pitalito*	*Río Nuqui*
Caimanero De Jampapa	*La Laguna-El Coso-Cinco Caminos*	*Río Orpua*
Camaritagua	*La Libertad 2*	*Río Panguí*
Cañaveral	*La Lomita*	*Río Pavasa Y Quebrada Jella*
Cañaverales-Antado	*La Paya*	*Río Pichima*
Caño Negro	*La Perecera*	*Río Purricha*
Caño Padilla	*La Puria*	*Río Quiparado*
Cañón Del Río Sanquinini	*La Raya*	*Río Satinga*
Caranacoa Yuri-Laguna Morocoto	*La Teófila*	*Río Siare*
Carpintero Palomas	*La Turbia*	*Río Taparal*
Carrizal	*La Unión Choco - San Cristobal*	*Ríos Catru-Dubasa Y Ancoso*
Cecilia Cocha	*La Yuquera*	*Ríos Cotuhé y Putumayo*
Centro Miraflores	*Lagarto Cocha*	*Ríos Cuiari E Isana*
Chachajo	*Lagos Del Dorado, Lagos Del Paso Y El Remanso*	*Ríos Jurubida-Chori y alto Baudo*
Chagpien Tordo	*Laguna Araguato Y Barranco Ceiba*	*Ríos Pato y Jengado*
Chagui Chimbuza Vegas y Otros	*Laguna Niñal,Cocuy, Loma Baja Y Loma Alta Del Caño Guariben*	*Ríos Torreido Y Chimani*
Chaquenoda	*Laguna Tranquila*	*Ríos Uva y Pogue-Quebrada Taparal.*
Chigorodo Memba	*Laguna-Curvina Sapuara*	*Ríos Valle Y Boroboro*
Chiguiro	*Lanas*	*Sabaleta*

Chimurro y Nendó	*Llanos Del Yarí - Yaguará Ii*	*Sabaletera San Onofre Y El Tigre*
Chonara Huena	*Loma De Citabara*	*Sabanas De Curipao*
Chontadural Cañero	*Los Almendros*	*Salaqui Y Pavarando*
Choromandó Alto Y Medio	*Los Iguanitos*	*San Agustin-La Floresta*
Chuscal y Tuguridocito	*Los Niasa*	*San Francisco*
Cibariza	*Macarieros*	*San José Amia De Pato*
Coayare El Coco	*Maiz Blanco*	*San Juan De Pampon*
Comeyafu	*Majoré-Amburá*	*San Miguel De La Castellana*
Concordia	*Mamey De Dipurdá*	*San Pablo El Pará*
Consara-Mecaya	*Maticurá*	*Sanandocito*
Cope Del Río Ingara	*Mesai*	*Sanquianguita*
Corinto López Adentro	*Miasa De Partado*	*Santa Cecilia De La Quebrada Oro Chocó*
Corocora	*Minitas-Miralindo*	*Santa María De Pangala*
Coropoya	*Mirití-Paraná*	*Santa Marta De Curiche*
Cristianía	*Mocagua, Macedonia, El Vergel Y Zaragoza*	*Santa Rosa De Ijua*
Cuaiquer Integrado La Milagrosa	*Monochoa*	*Santa Sofía*
Cuambi-Yaslambi	*Morichal Viejo, Santa Rosa, Cerro Cucuy, Santa Cruz, Caño Danta- Otros*	*Saunde Guiguay*
Cuasbil-La Faldada	*Morrito*	*Selva De Matavén*
Cuascuabi-Paldubi	*Motilón - Barí*	*Sever*
Cuayquer Del Alto Albi	*Motordo*	*Sirena Berrecuy*
Cuchilla-Palmar	*Mungaradó*	*Socorpa*
Cuenca Media Y Alta Del Río Inirída	*Murciélago Altamira*	*Tagual-La Po*
Cumaral-Guamuco	*Murri-Pantanos*	*Tama Del Caguan*
Curare Los Ingleses	*Napipí*	*Tiosilidio*
Dachí Agore Drua	*Nuevo Pitalito*	*Togoroma*
Dearade Biakirude	*Nukak - Maku*	*Tokolloro*
Do Imama Tuma Y Bella Luz	*Nulpe Medio-Alto Y Río San Juan*	*Tonina, Sejal, San José Y Otras*
Docordo-Balsalito	*Nunalbí Alto Ulbí*	*Tortugaña, Telembi, Punde, Pitadero, Bravo, Tronqueria Y Zabaleta*
Dominico, Londoño y Apartadó	*Nunuya De Villazul*	*Totoró*
Doxura	*Nusido*	*Trapiche Del Río Pepé*
El 18	*Nussi Purru*	*Triunfo Cristal*
El Charcón	*Opogadó - Doguadó*	*Tronqueria, Pulgande-Palicito*
El Doce o Quebrada Borbollón	*Ordo Sivirá Aguaclara*	*Tucán De Caño Giriza Y Puerto La Palma*
El Espingo	*Paina*	*Tumbichucue*
El Fiera	*Paletará*	*Tungina Y Apartado*
El Gran Sabalo	*Palmar Imbi*	*Uitiboc*
El Guayabal	*Papayo*	*Unido Uwa*
El Hacha	*Parte alta del Río Guainia*	*Unificado Chamí Del Río San Juan*

El Itilla	*Paso del Río Salado*	*Uradá Jiguamiandó*
El Piñal	*Patio Bonito*	*Valle De Perdidas*
El Porvenir Kananguchal	*Paujil*	*Valles Del Sol*
El Salado	*Pavarandó Y Amparradó Medio*	*Vania Chamí De Argelia*
El Sande	*Peña Blanca-Río Truandó*	*Vaupés*
El Tablero	*Peranchito*	*Vuelta Del Alivio*
El Veintiuno	*Perancho*	*Wanchirado*
El Venado	*Pialapi-Pueblo Viejo-San Miguel-Yare*	*Wasiruma*
Elveinte, Playalta Y El Noventa	*Pichicora, Chicue, Puerto Alegre*	*Witack Kiwe*
Eperara Siapidara Del Rio Naya	*Piedra sagrada la gran familia de los Pastos*	*Witora O Huitora*
Gabarra-Catalaura	*Piedra Sellada-Quebrada Tronqueria*	*Yaberaradó*
Gegenadó	*Piguambi Palangala*	*Yaigojé-Río Apaporis*
Getuchá	*Pingullo-Sardinero*	*Yarumal Y El Barranco*
Gito Docabu	*Pipalta-Palbi-Yaguapi*	*Yavilla Ii*
Gran Rosario	*Planadas Telembí*	*Yu Yic Kwe*
Guachicono	*Playa Larga*	

Source: author's own compilation based on ANT, 2019; PNN, 2018 (shapefile).

- *Resguardos* overlapped by protected areas

Agua Negra	*Inga de Condagua*	*Poblazon*
Alta Y Media Guajira	*Inga de San Miguel*	*Predio Putumayo*
Alto Orito	*Iroka*	*Puerto Córdoba*
Alto Río Bojayá	*Jaikerazavi*	*Puerto Nariño*
Alto Río Buey	*Jirijiri*	*Puerto Sabalo*
Alto Sinu, Esmeralda Cruz Grande E Iwagado	*Kaméntsá Biya De Sibundoy*	*Puracé*
Andagueda	*Kankuamo*	*Quebrada Cañaveral*
Angosturas	*Kogui-Malayo Arhuaco*	*Quintana*
Arhuaco de La Sierra Nevada	*Kokonuco*	*Mocagua, Macedonia, El Vergel y Zaragoza*
Arquia	*La Esperanza*	*Morichal Viejo, Santa Rosa, Cerro Cucuy, Santa Cruz, Caño Danta- Otros*
Bajo Casacunte	*La Paya*	*Ríos Cotuhéy Putumayo*
Caño Guaripa	*La Perecera*	*Ríos Cuiari E Isana*
Canoas	*La Tatacoa*	*Ríos Jurubida-Chori Y Alto Baudo*
Cecilia Cocha	*Lagarto Cocha*	*Ríos Valle Y Boroboro*
Chaquenoda	*Laguna Tranquila*	*Refugio El Sol*
Chidima Tolo	*Llanos Del Yarí - Yaguará Ii*	*Sabanas De Curipao*
Cibariza	*Lomamato*	*San Francisco*
Comeyafu	*Mañature*	*San José*
Consara-Mecaya	*Miritíi-Paraná*	*San Lorenzo*

Cristianía	*Mocagua, Macedonia, El Vergel Y Zaragoza*	*Sever*
Cuaiquer Integrado La Milagrosa	*Morichal Viejo, Santa Rosa, Cerro Cucuy, Santa Cruz, Caño Danta- Otros*	*Simorna*
Cuatro De Noviembre	*Motilón - Barí*	*Tonina, Sejal, San José Y Otras*
Cuenca Media y Alta del Río Inírida	*Murri-Pantanos*	*Tukunare*
Curare Los Ingleses	*Nam Misak*	*Uitiboc*
El Gran Sabalo	*Nukak - Maku*	*Unido Uwa*
El Hacha	*Paez De Gaitanía*	*Unificado Chamí Del Río San Juan*
El Itilla	*Paletará*	*Valle De Perdidas*
El Porvenir Kananguchal	*Palmar Imbi*	*Valles Del Sol*
El Progreso	*Parte Alta del Río Guainia*	*Vaupés*
El Soldado Parate Bien	*Pasto de Iles*	*Villa Maria De Anamá*
El Tablero	*Peranchito*	*Witora / Huitora*
Eyakera Dogibi	*Perratpu*	*Yaberaradó*
Gabarra-Catalaura	*Pescadito*	*Yaigojé-Río Apaporis*
Guacamayas Maipore	*Pialapi-Pueblo Viejo-San Miguel-Yare*	*Yu Yic Kwe*
Hermeregildo Chakiama	*Pickwe Ikh*	*Yungillo*
Inga de Aponte	*Playas de Bojabá*	

Source: author's own compilation based on ANT, 2019; PNN, 2018 (shapefile)..

- *Resguardos* overlapped by both types of blocks at the same time

Agua Negra	*Cristianía*	*Jirijiri*
Alto Río Buey	*Cuaiquer Integrado La Milagrosa*	*Kaméntsá Biya De Sibundoy*
Alto Sinu, Esmeralda Cruz Grande e Iwagado	*Curare Los Ingleses*	*Kankuamo*
Andagueda	*El Gran Sabalo*	*Kogui-Malayo Arhuaco*
Angosturas	*El Hacha*	*Kokonuco*
Arhuaco De La Sierra Nevada	*El Itilla*	*La Esperanza*
Bajo Casacunte	*El Porvenir Kananguchal*	*La Paya*
Cecilia Cocha	*El Tablero*	*La Perecera*
Chaquenoda	*Gabarra-Catalaura*	*Lagarto Cocha*
Cibariza	*Inga De Aponte*	*Laguna Tranquila*
Comeyafu	*Iroka*	*Llanos Del Yarí - Yaguará Ii*
Consara-Mecaya	*Jaikerazavi*	*Mirití-Paraná*

Source: author's own compilation based on ANT, 2019; PNN, 2018 (shapefile)..

- Summary

Total overlapped by forest reserves	335
Total overlapped by protected areas	105
Total overlapped by reserves and protected areas at the same time	72

Total *resguardos* overlapped by reserves and protected areas	368

Source: author's own compilation based on ANT, 2019; PNN, 2018 (shapefile)..

13.6 Appendix F

- *Resguardos* overlapped by hydrocarbon blocks in exploration stage

Agua Blanca	*El Suspiro*	*Playa Larga*
Albania	*El Tigre*	*Puyeros*
Alpamanga	*EL Vigía*	*Ríos Muco y Guarrojo*
Alta Y Media Guajira	*GETUCHÚ*	*Roqueros*
Alto Unuma	*Gorgonia*	*Rumiyaco*
Bella Vista	*Inga De San Miguel*	*Sabanas De Curipao*
Blasiaku	*Inkal Awa*	*San Andres - Las Vegas - Villa Union*
Bocanas de Luzon	*ISHU AWA*	*San Antonio del Fragua*
Buenavista	*Julieros y Velasqueros*	*San José del Lipa y Caño colorado*
Cañaveral	*La Aguadita*	*San Juanito*
Caño claro	*La Argelia*	*San Miguel De La Castellana*
Caicedonia	*La Cristalina*	*San Rafael*
Calarca	*La Esperanza*	*Santa cruz Piñuña blanco*
Calenturas	*La Esperanza - La Fortaleza y El Totumo*	*Santa rosa del Guamuéz*
Campo Alegre Del Afilador	*La Florida*	*Selva Verde*
Chaluayaco	*La Italia*	*Sikuani de awaliba*
Chaparral Y Barronegro	*La Voragine-La Ilusion*	*Sikuani De Domo Planas*
Cibariza	*Las Brisas*	*Sikuani De Iwiwi*
Corozal Tapaojo	*Los Guaduales*	*Sta Rosa-Juanambu-Campo Alegre-Alpes Orientales*
Cuiloto Ii	*Los Iguanitos*	*Valles Del Sol*
Cusay	*Los Pijaos*	*Vegas De Santana*
Damasco Vides	*Macucuana*	*Vencedor-Piriri-Guamito Y Matanegra*
El Consejo	*Muco Mayoragua*	*Villa Catalina-De Puerto Rosario*
El Descanso	*Niñeras*	*Waliani*
El Duya	*Nuevo Horizonte*	*Wasipanga*
El Espingo	*Paez Del Libano*	*Wasipungo*
El Porvenir - La Barrialosa	*Paravare*	*Yarinal (San Marcelino)*
El Quince	*Parreros*	
El Saladillo	*Piedra Sagrada La gran familia de Los Pastos*	

Source: author's own compilation based on ANH, 2019; ANT, 2019.

- *Resguardos* overlapped by hydrocarbon blocks in production stage

Agua Blanca	*El Médano*	*Puerto Limon*
Alta Y Media Guajira	*El zamuro*	*Rumiyaco*

Alto Lorenzo	*ISHU AWA*	*San Juanito*
Alto Unuma	*La Cristalina*	*San Miguel De La Castellana*
Bayoneros	*La Floresta - La Española*	*Santa Rosa Del Guamuéz*
Cañaveral	*Los Guaduales*	*Sikuani De Domo Planas*
Cajaros	*Nasa Chamb*	*Wasipungo*
Corocito, Yopalito Y Gualabo	*Nasa Uh*	*Yarinal (San Marcelino)*
El Duya	*Paravare*	

Source: author's own compilation based on ANH, 2019; ANT, 2019.

- *Resguardos* overlapped by blocks in exploration and production stage at the same time

Agua Blanca	*La Cristalina*	*Santa Rosa del Guamuéz*
Alta Media Guajira	*Los Guaduales*	*Sikuani de Domo Planas*
Alto Unuma	*Paravare*	*Wasipungo*
Cañaveral	*Rumiyaco*	*Yarinal (San Marcelino)*
El Duya	*San Juanito*	
ISHU AWA	*San Miguel de La Castellana*	

Source: author's own compilation based on ANH, 2019; ANT, 2019.

13.7 Appendix G

- Relevant oil extraction-related projects for *El Duya* between 1995 - 2018

Year	Project	Company	Activity	Environmental license/permit
1995	Association contract *Corocora*-C	Kelt Colombia /Perenco Colombia Limited	Initiation of Construction of production field *Caño Duya*	Res. 410 of 02.05.1995 - Ministry of environment
1996	Association contract *Corocora*-C	Kelt Colombia	Crude oil transportation through trucks	Res. 271 of 26.03.1996 - Ministry of environment
1999	Association contract *Corocora*-C	Kelt Colombia /Perenco Colombia Limited	Seismic project	Not subject of environmental license. Inability to enforce regional Environmental permits.
2000	Association contract *Corocora*-C	Kelt Colombia /Perenco Colombia Limited	Drilling of pit *Caño Duya*-2	Res. 410 of 02.05.1995 - Ministry of environment
2006	Block *Lince*	HOCOL S.A./ Interoil Colombia Exploration and Production	Area of exploratory drilling *Lince*	Resolución Nº 773 del 9 Mayo de 2007. LAM3590

2007	Block *Lince-Leopardo*	HOCOL S.A./ Interoil Colombia Exploration and Production	Area of exploratory drilling Lince- *Leopardo*	Resolución Nº 1927 del 31 de Octubre de 2007, para el proyecto denominado Area de perforación exploratoria *Lince-Leopardo*. Expediente LAM 3657
2007	Contract *Oropéndola*	Conequipos	Seismic block *Oropéndola*	Permits are likely to have been obtained in Corporinoquia, according to Res. 200.15.07-0983 of 2007
2010	Contract *Oropéndola*	Columbus Energy Colombia	Hydrocarbons exploitation in block *Oropéndola*-1	Res. 2121 of 26.10.2010 - Ministry of environment, housing and territorial development
2013	Contract *Oropéndola*	Perenco Colombia Limited	Enlargement of block *Oropéndola*-1 (block west *Oropéndola*)	Res. 400 of 02.05.2013 (ANLA)
2018	Block *Llanos* 47	Interoil Colombia Exploration and Production	Proyect Environmental impact asessment for the modification of the license for the block *Llanos* 47	

Source: author's own compilation based on ANLA, 2019.

13.8 Appendix H

Environmental determinants in Corporinoquia's jurisdiction

Zoning category	Definition
Natural elements	Areas related to the conservation of strategic ecosystems and the protection of the supply of ecosystem goods and services. Include: 1) flora and fauna at the municipal level; 2) forest protection and management distict areas; 3) Civil society natural reserves -RNSC; 4) microbasins used for water supply; 5) areas of special importance because of its ecosystems; 6) biological corridors and 7) the amphibiome Arauca-Casanare.
Climate change and risk management	Corresponds to guidelines and regulations regarding risk management and climate change, in order to guarantee their incorporation in territorial planning. Includes areas with some degree of erosion, deforestation and human-driven degradation.
Transformed elements	Areas in which it is feasible to promote urban developments; agricultural, livestock and forestry systems; industry and agribusiness related activities, tourism, public infrastructure, mineral and hydrocarbons extraction, unless they foster conflicts with other zones.

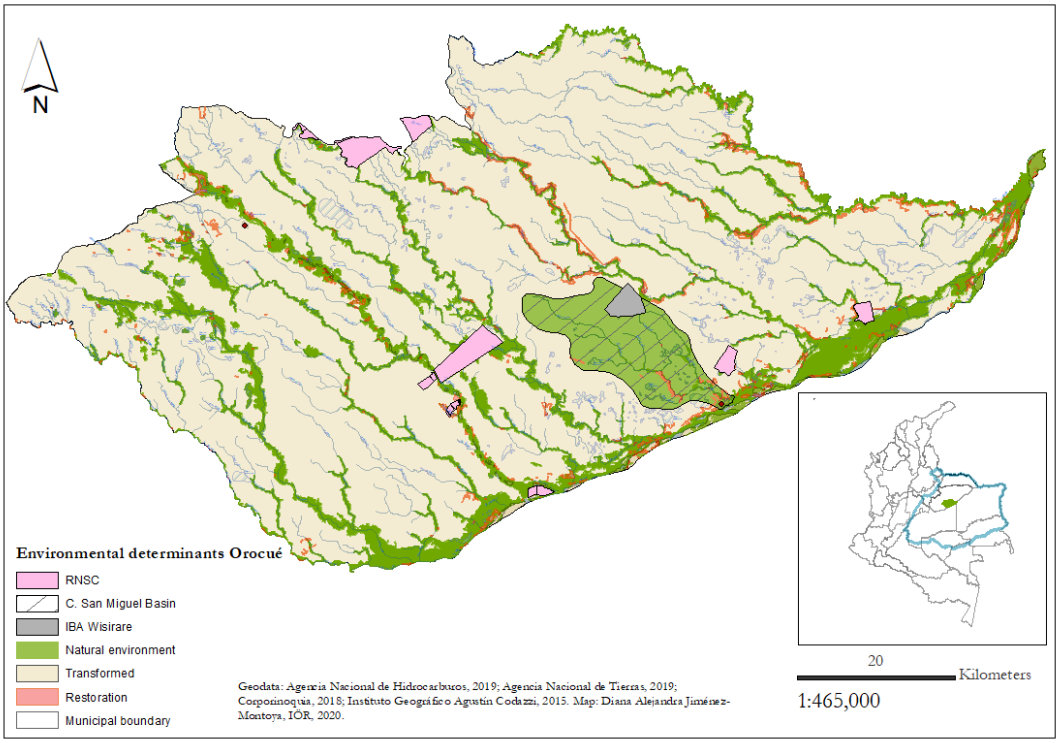
Source: author's own compilation based on Corporinoquia, 2017.

The determinants include a microbasin used for water supply; areas of special importance because of its ecosystems, mainly gallery forests, and RNSC[342]. In addition to these, two river basin plans are relevant, the *Río Cravo sur* zoning and management plan which has been formally adopted plan, and the stream *Caño San Miguel* whose plan is still in its formulation process. The resolution lists several rivers and streams whose protection margins should be declared as conservation zones. Among these, the streams of interest for *El Duya* are the streams *Churrubay, San Miguel, Ocumo, Tujúa and Duya.* According to the resolution, these margins constitute '*areas of very high environmental sensitivity, therefore, any intervention on them alters their function of flow regulation, erosion control and sediment flow; as well as the protection of fauna'*. As well, it stablishes areas of environmental importance[343], among which the Important Bird Areas (IBAs) are relevant for Orocué. One of them, *Wisirare*, is located right next to the *resguardo El Duya.*

According to the resolution, the municipality should prevent and mitigate disturbances over the IBA and clasify this area under the category of conservation and environmental protection. In relation to wetlands (*esteros*) the resolution states that the municipality should restrict or prohibit activities based on technical assessments conducted by the ministry of environment; nevertheless, no geographical coordinates are provided to identify which wetlands are included in this regulation. The resolution states that there is not enough knowledge about the aquifer recharge areas relevant for Orocué, which, nevertheless, should be later declared as conservation areas. Finally, it is indicated that municipalities should promote the management and conservation of the floodable savannas of Arauca and Casanare and promote programs to '*recognise their importance in the dynamics of the hydrological cycle of the Orinoco river basin and their productive capacity linked to traditional agriculture and extensive cattle ranching'* (art. 13).

[342] The resolution refers to four reserves in Orocué: *Las Malvinas*, *San Pablo*, *La Esmeralda* and *Palmarito.*
[343] Wetlands categorized under the Ramsar convention; Biosphere reserves; Transitional forests between *Orinoquia* and Amazon regions.

- Environmental determinants Orocué



Source: author's own compilation based Corporinoquia, 2017.

Erklärung zur Eröffnung des Promotionsverfahrens

1. Hiermit versichere ich, dass ich die vorliegende Arbeit ohne unzulässige Hilfe Dritter und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe; die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht.

2. Bei der Auswahl und Auswertung des Materials sowie bei der Herstellung des Manuskripts habe ich keine Unterstützungsleistungen erhalten.

3. Weitere Personen waren an der geistigen Herstellung der vorliegenden Arbeit nicht beteiligt. Insbesondere habe ich nicht die Hilfe eines kommerziellen Promo-tionsberaters in Anspruch genommen. Dritte haben von mir weder unmittelbar noch mittelbar geldwerte Leistungen für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen.

4. Die Arbeit wurde bisher weder im Inland noch im Ausland in gleicher oder ähn-licher Form einer anderen Prüfungsbehörde vorgelegt.

6. Ich bestätige, dass ich die Promotionsordnung der Fakultät Umweltwissen-schaften der Technischen Universität Dresden anerkenne.